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Bald Eagle, White-headed Eagle.

OUR BIRDS OF PREY,

OR THE

EAGLES, HAWKS, AND OWLS

OF

CANADA.

By

HENRY G. VENNOR, F. G. S.

Of the Geological Survey of Canada.

With 30 Photographic Illustrations by Wm. Notman.

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NOTE.—On page 2, eleventh line from top, for *third* read *fourth*—this number referring to the BIRD OWLS, embracing the Burrowing and Pigmy Owls, which are not represented in Canada.

"It is frequently a matter of surprise, to those little versed in ornithological science, that although we have already several works relating to Ornithology, and more especially to that of our own island, yet that others, apparently with a similar aim, are almost continually issuing from the press. 'Why,' say they, 'should we have the same history so often over?' Now, though this shallow mode of argument appears sufficiently plausible to the 'general reader,' the experienced ornithologist at once perceives the emptiness and the absurdity of the remark. If each succeeding author *did* tell the same story, surely no one would take the needless trouble of consulting his works. But the fact is, that Nature can never be exhausted, and however long and minute the descriptions of the economy of any bird may be, much yet remains to be added.

* * * * * * * *

"No work treating of our Ornithology, hitherto published, has been without its due share of errors and defects; and, indeed, all that we can ever hope to achieve with regard to the habits of our feathered tribes, is to add as much as possible to their biographies."—(WOODS' "*British Song Birds.*")

INTRODUCTION.

THE Natural History of Canada has received a very fair share of attention from Naturalists both at home and abroad, but in no one department of this fascinating study can the ground yet be said to be well trodden. In commencing work in this field some thirteen years ago, I chose as a special object of investigation our Birds of Prey, as affording a field perhaps less trodden than others.

From the year 1865 to the present, in connection with explorations undertaken on behalf of the Geological Survey of Canada, I have had unusual facilities for field observation, and have traversed the greater part of that portion of Ontario which may be described as lying between the Ottawa River and its sources, and the St. Lawrence and its Great Lakes—a region the interior of which is but thinly settled and comparatively unknown; also, a large part of the country lying to the northward of the Ottawa River, between the Lake of Two Mountains and Pembroke. In these explorations, of course, ornithological studies were of secondary consideration, the chief object being the unravelling of the geological structure of the region travelled over. Nevertheless our eyes were always open, and everything was carefully noted down: whether this was a cliff of the old Laurentian crystalline limestone—the abode of our celebrated *Eozoon Canadense*; a hole in the mountain's side made by the irrepressible mineral hunter; an Eagle perched on his rocky crag; or a painted Butterfly sporting amid the wild-blossoms of the mountain dell. Thus, along with others, Ornithological facts and specimens rapidly accumulated—many of the first, important; and many of the last, rare, interesting and beautiful. The Geological gleanings speedily found their way to the public through the annual Reports of the Geological Survey, but my treasured Ornithological notes and specimens were left with me to dispose of as I pleased. These have been carefully studied, arranged, and supplemented

with the observations of other Canadian *field* workers, and are herewith handed to the public as a slight contribution to our Ornithology, and in the hope their their perusal will not only be an aid to our young collectors in the identification of their specimens, but will be the means of awakening a more lively interest in the study of our Birds generally.

Illustrations.—As a work of this kind unillustrated would be but of little service to our students or the public generally, I have, after much consideration and no little experimenting, accomplished this by photography. Such a method, attempted even a few years back, could not but have resulted in failure; but, to-day, to such perfection has this art been brought, that the pictures produced by it are not only beautiful, but truthful to the most minute detail.

Mr. Wm. Notman, of Montreal, to whom was first suggested this method of illustrating the book, most kindly entered heart and soul into the undertaking, and throughout the whole work has afforded me every facility in his power, and has spared neither material nor labor, in order to render the Plates satisfactory and truthful to nature. I have only to add that his name to these is a sufficient guarantee of their merit, and that any defect which may exist is to be ascribed to my selection of the specimens. In this last I have not chosen, in any case, rare, unusual, or particularly beautiful plumaged individuals to represent the different species, but rather common or typical forms of these, male and female, young and adult, or such as the collector and traveller would most generally meet.

Attitude and Form of the Birds figured.—These are points requiring a great deal of attention in the photographing of stuffed specimens, and respecting which I have already been brought to task by a few of my naturalist friends to whom some of the Plates were shown. My experience, however, among naturalists has been that no two agree as touching any position which may be chosen for a bird, and consequently no Plates, no matter how perfectly executed, could please all. Besides, I have invariably found that those who find most fault in this respect, are persons who have been little on the *field* themselves, or, in other words,

who rather belong to the class known as *closet*, than *field* naturalists; the latter knowing well that it is really almost impossible to conceive of a position which is not sometimes assumed by the living bird. Of this fact I have recently been more convinced than ever from the study of two living specimens of Owls—the Snowy Owl and the Short-eared Owl—which have been in my possession for some months. For instance, taking one out of the many positions indulged in by the first of these birds, what would my criticising friends have thought and said had I represented him as a round ball of white feathers, head hardly perceptible, feet entirely concealed, and squatting on the ground like a hen covering her chickens. Yet this is the position in which I always find my Snowy Owl when I unexpectedly enter her abode. When aroused, however, she draws herself up, her head and feet become visible, and she presents such a figure as one of those given on the two Plates which have been allotted to this species in this work. The Short-eared Owl has many remarkable attitudes, and most of these differing from any of those in which the bird is figured in ornithological works. His wings are seldom kept close to his body, but rather in a drooping position, and either resting on the perch on which he sits, or, as the case may be, trailing on the ground; while his head is generally sunk deeply between his shoulders. In fine, the attitude of a bird is anything conceivable. The form of the bird is of far greater importance than its attitude, and in the specimens selected for this work this was carefully perpetuated by means of girths and numerous measurements made from the bird *while in the flesh*, and generally immediately after death.

Of still greater importance, however, than either of the foregoing points, is the careful selection, already referred to, of proper or typical forms of plumage, of young, old, male and female birds. Compared with this the attitude is of but trifling consideration, and it would have served the purpose of this work equally well had I simply selected and photographed appropriate unmounted skins. Indeed, had it been necessary in order to show properly some specific detail connected with the feet and claws, I should not have hesitated to have mounted the bird accommodatingly holding forth his foot for the inspection of the enquiring student; so when the

exhibition of the under sides of the wing was desirable, I have not hesitated to give the bird the necessary position.

In fine, the main object of this work is practical utility—not a mere exhibition of pretty photographs. In it I have endeavored to represent every species of Falcon, Hawk, Buzzard, Harrier, Eagle, and Owl, which has up to the present time been found in Canada. Consequently, should collectors still find something different from anything here figured and described, they may feel certain that they have either a species new to our fauna, or a form or variety of very uncommon occurrence. In either case the circumstance would be of great interest to Ornithologists, and I take this opportunity of requesting such discoverers to communicate either with myself or the Natural History Society of Montreal.

It now only remains for me to sincerely thank all those who have in any way assisted me, either by the loan of specimens or by furnishing me with desired information. The names of such I have embodied in the proper places in the body of this work; but special mention may here be made of the following:

To Dr. Spencer F. Baird and Mr. Robert Ridgway of the Smithsonian Institution, Washington, D.C., for the proper identification of the bird in our Museum, heretofore known as Dawson's Falcon, and for facts relating to other species; to Dr. Bernard J. Gilpin of Halifax, N.S., for MS. list of the Rapacious Birds of that Province; the Rev. Duncan Anderson of Levis, Quebec, for the rare specimen of the White Gyr-Falcon; to the Montreal Nat. Hist. Society for specimens placed at my disposal; to Dr. John Bell of Montreal for the beautiful specimen of the Bald Eagle; to Wm. Couper, naturalist, of Montreal, for MSS. notes; to Mr. W. Passmore of Montreal, for interesting notes on captive Eagles; to Prof. Ramsay Wright of University College, Toronto, for a complete list of the specimens contained in that Museum; and lastly, to Mr. Thos. McIlwraith of Hamilton, for the specimen of the Duck-Hawk, and for many notes illustrative of the habits and distribution of the birds in that vicinity.

HENRY G. VENNOR.

MONTREAL, *1st June, 1876.*

ORDER **RAPTORES:** BIRDS OF PREY.

CHAR.—Base of upper mandible with a soft skin or cere. Upper mandible compressed; its point curving down over that of the lower, forming a strong, sharp hook. Toes, four, one behind. Size usually large, and frame powerful. Female bird the larger, except in the Vultures. This order embraces the so-called Birds of Prey.*

These birds may be separated into two sub-orders, namely:—

A. True birds of prey, which catch their victims alive, and are distinguished by their powerful bills, claws, and powers of flight.

B. Carrion-eaters, feeding on dead animals, having comparatively weak bills, long, straight claws, and heavy flight.

Species are found in all parts of the world. They are analagous to the *Rapacia* among mammals, and their particular office in the economy of nature is to keep in check the excessive increase of the smaller kinds of animals. The carrion-eaters are chiefly limited to the warm climates.

The Birds of Prey embrace three great families:

The VULTURIDÆ, or VULTURES.
The FALCONIDÆ, or FALCONS and allies.
The STRIGIDÆ, or OWLS.

Of these, the first two are known as the *Diurnal*, and the last as the *Nocturnal* birds of prey.

The VULTURIDÆ comprise three genera of which only one is represented in Canada, namely, the genus *Cathartes*, to which belongs the Turkey Buzzard or Turkey Vulture, *C. aura*, Illig. This species is described as inhabiting "all North America, except the Arctic regions." It is, however, rarely met with in Canada

* Here, and in the following pages of this work, the general, generic, and specific characters are from the standard works of Cassin and Baird, except where otherwise expressly mentioned.

proper, and only in one or two localities, e.g., the extensive flats near Chatham and Lake St. Clair, where, I am informed, it is a regular summer visitant, feeding upon the carcasses of drowned cattle. It is not figured or further described in this work.

The FALCONIDÆ comprise five sub-families and a great number of genera, which embrace all our Falcons, Hawks, Buzzards, Harriers, and Eagles.

The STRIGIDÆ include all our Owls, which are likewise arranged in five distinct sub-families, namely, Typical Owls, Horned Owls, Gray Owls, Bird Owls, and Day Owls. Of these, the first and third are not represented in Canada. About one hundred and fifty species are known, forty of which belong to America and ten to Canada. Until very recently however eleven species were set down as Canadian; but one of these, the Kirtland Owl, is now thought to be merely the young form or red stage of the little Acadian Owl, perhaps more generally known as the *Saw-whet* Owl.

Of the Typical Owls, or *Strigina*, the Barn Owl is mentioned by many authors as a species inhabiting the temperate parts of North America; but there is no authentic record of its occurrence in Canada. There are however stories in circulation of such an occurrence, which, should they prove true, would enable us to add this species to our list of *rare stragglers*. The bird has been met with in Newfoundland, and is occasionally captured in the New England and Middle States. One was taken in the city of Lancaster, Penn. in a high church steeple, and was at the time noted as "almost as rare a bird in this latitude as the Golden Eagle." Another was taken near Springfield, Mass. in May, 1868; and Dr. Wood, of East Windsor Hill, has, or had a specimen in his cabinet that was shot at Sachem's Head, Conn. during 1865. In a catalogue of the "Birds of Connecticut" Mr. Linsley records the capture of another Barn Owl at Stratford. Altogether perhaps, only about five or six birds of this species have been taken in the whole of the Middle and New England States up to the present year (1876), and consequently its extension into Canada must be considered as merely accidental. It is not figured or further described in the present work.

Family FALCONIDÆ, The Falcons.

Sub-Family FALCONINÆ.

FALCO, Linnæus.

Gen. Char.—General form robust and compact; bill short, curved strongly from the base to the point, which is very sharp, and near which is a distinct and generally prominent tooth; nostrils circular, with a central tubercle; wings long, pointed, formed for vigorous, rapid, and long-continued flight; tail rather long and wide; tarsi short, robust, covered with circular or hexagonal scales; middle toe long; claws large, strong, curved, and very sharp.

The species constituting this genus are justly regarded by Ornithologists as the typical or most completely organized of rapacious birds. They are remarkable for exceedingly rapid flight, and great boldness in the attack and capture of their prey, which consists of birds and quadrupeds often much larger than themselves. They are found in most parts of the world: the number of species being fifteen or twenty. Four or five occur in Canada.

Falco Anatum, Bonaparte.

THE DUCK HAWK: PEREGRINE.

PLATE I.

This is the "Falco Peregrinus" of Wilson, Audubon, and other writers, and probably the Falco-nigriceps of Cassin. This beautiful bird is regarded as the most typical species of the "true Falcons," or noble birds of prey. It is nowhere very abundant, although pretty generally distributed over the whole of North America, east of the Rocky Mountains. It has been observed by travellers, explorers, and Hudson Bay officers on the coasts of Hudson Bay and the Arctic Sea; on the "Barren Grounds"; at Cape Farewell, on the coast of Greenland; on the coasts of Labrador, Newfoundland, Gulf of St. Lawrence, New Brunswick, and Nova Scotia; as also along the sea coasts of Maine, New Hampshire, Massachusetts, Connecticut, Long Island Sound, New Jersey, and Delaware, along the whole of which sea-board it is celebrated for the havoc it makes among the wild fowl. It has also been noted in East Florida, at St. Augustine, and is well

known to occur in Cuba and other of the West India Islands. It probably is also more or less frequent all along the eastern coasts of South America, and Captain King states that it is found in the Straits of Magellan. A few find their way up the St. Lawrence, and have been observed and killed at Quebec, Sorel, Montreal, Toronto, Hamilton, at Baptiste Creek, and at Long Point on Lake Erie. On this course they appear to continue, by way of the great lakes and connecting rivers, westward to the slopes of the Rocky Mountains, which appear to bar or limit their flight in this direction. They are, however, again met with rather abundantly on the Peace and Parsnip Rivers in latitude 55°-56°, where they revel on their favorite wild fowl prey, which breed there in unusual numbers. They have also been met with on the McKenzie River, northward to Slave Lake, where, however, according to Ross, they are rare. To the westward of the Rocky Mountains I have not come upon any authentic record of the occurrence of this species, but its place is filled by a closely allied one, the *Falco-nigriceps*, of Cassin, a bird in every respect similar to the Duck Hawk, except in size, and perhaps stronger coloring of the under parts. This second *supposed* species was first described in 1858 from specimens received from California and Chili. These were undeniably smaller than the Duck Hawk of eastern North America, with the rufous color of the under parts in the young of a stronger tint; but other specimens since obtained from farther north fully equal those from the eastern slope of the Rocky Mountains, "and "the slight difference found to really exist between them seem to "be by no means of specific value."*

In Canada proper the Duck Hawk is a rare bird, only being met with in a few localities and at certain seasons. It appears to prefer the sea coast, and makes but hasty visits across the interior lying between the St. Lawrence and Hudson Bay. I did not meet with it on any of my explorations in eastern Ontario, between the St. Lawrence and Ottawa Rivers, nor did the inhabitants of this section seem to be aware of the existence of any such Hawk. A fine adult male, however, of this species was obtained by Mr. Marcel at St. Lamberts, near Montreal. It is a rather regular

* J. A. Allen, in Bulletin Mus. Comp. Zool., Harv. Coll., Cambridge, Mass. (Vol. II., p. 317).

visitant in the neighborhood of the Bay of Toronto every spring and fall, and occasionally falls a prey to the gun of the sportsman; but it is said by the hunters to be a bird extremely difficult to obtain. A few, however, have from time to time been killed, and these now figure in one or two private collections in Toronto and Montreal. Mr. W. Passmore, taxidermist to the Montreal Natural History Society, who formerly resided and collected largely at Toronto, informs me that the Duck Hawks arrive with the first flights of wild fowl every spring and fall in the Bay near that city; that here they wage constant warfare upon the ducks and other water fowl, but are, as a general rule, too wary to allow themselves to be shot. He describes their flight as being inconceivably swift, and their "stoop" as comparable to the falling of a lump of lead. They remain on the wing for hours at a time, and often rise to great heights. Their bodies are wonderfully heavy for the size of the bird, and their plumage is of the most compact description. Some specimens which I obtained from Mr. Passmore are exceedingly small, being only 13 to 14 inches in length, from tip of bill to end of tail.

In Hamilton, according to McIlwraith, they are but rarely met with; they, however, are occasionally seen at Baptiste Creek, on the line of the Great Western R.R., and are often killed by the gunners at Long Point, on Lake Erie. More are killed, says McIlwraith, than perhaps is generally known, and but a few of these are utilized. There are some five or six specimens of this bird in collections in Hamilton, three of which figure in that of the gentleman just named. Chatham and the Lake St. Clair flats, are other likely localities for the occurrence of this species. Whether the Duck Hawk nests in the central portions of Canada is not yet known; but the north shore of Lake Superior would appear to offer suitable sites for this purpose. Richardson says, "It preys habitually on the Long-tailed Ducks (anas glacialis) which breed in great numbers in the Arctic regions, arriving in June and depart-in gin September." At Long Point on Lake Erie, and other shooting stations, it is observed to prey chiefly on that class of birds embraced under the general name of "Mud-hen."*

* McIlwraith, Hamilton, Ont.

A few years since some two or three pairs of Duck Hawks nested regularly on Mounts Tom and Talcott, in Massachusetts and Connecticut, but the poor birds were so continually harassed by enthusiastic oölogists and ornithologists, that they have been obliged to seek some more inaccessible position, and now but rarely breed in these States. I am inclined to believe that some of these birds breed every year among the mountains in the northern part of the State of New York, bordering upon the Canadian frontier, and among the adjacent "Chateauguay Mountains" in Canada. During the summer of 1870, the eggs of the Duck Hawk were received by Mr. C. W. Bennett from Vermont, this being the first known instance of their nesting in that State. The site chosen by the Duck Hawk for its eyrie is invariably in some inaccessible cliff or ledge of rock, in a well-selected cranny of which the nest is deposited. The eggs, according to Baird, are three or four in number, and of a chocolate color. It has never yet been known to nest in trees, although Wilson says "In the breeding season the Duck Hawk retires to the recesses of the gloomy cedar swamps, on the tall trees of which it constructs its nest, and rears its young, secure from all molestation." This statement is entirely conjectural, and is strangely at variance with the caution given to naturalists by him on a preceding page, where he says: "Naturalists should be always on their guard when they find themselves compelled to resort to the observations of others, and record nothing as fact which has not been submitted to the temperate deliberations of reason. The reverse of this procedure has been a principal cause why errors and absurdities have so frequently deformed the pages of works of science, which, like a plane mirror, ought to reflect only the genuine images of nature." Other writers reproduced this error of Wilson's, and as the European Peregrine was well known to nest on cliffs, it was for a time conjectured, from this difference in breeding habits, that the European was a distinct species from the American.* There being, however, really no difference in this respect, and but little

* In 1838, Bonaparte, in his "Geographical and Comparative List," gave to the American Peregrine or Duck Hawk, the name *Falco anatum*. Previous to this time all writers had considered it, and it seems to me justly, as identical with the European Peregrine, or F. peregrinus,—an opinion still held by many eminent ornithologists. Until about this date the Peregrine Falcon was

in any other, between the birds of the two continents, I believe they are to-day regarded by our leading ornithologists as specifically identical. To Prof. S. S. Haldeman, is due the credit of having first made known, not only the fact of the Duck Hawk breeding on cliffs, but also of its breeding in the United States. Perhaps the most complete and instructive account yet published respecting the nesting of the Peregrine Falcon is that by Allen, in the Proceedings of the Essex Institute, (Vol. IV., page 153), wherein he describes the eyrie on Mount Tom, Mass. In a subsequent article in the American Naturalist (Vol. III., page 314) further notes of interest on the same locality are given, and as I am persuaded that these articles have been read but by few in Canada, I close my history of the present species with an extract from the last-named Journal. Allen says, referring to the eyrie on Mount Tom :—

"These eggs were the first eggs of the Duck Hawk known to naturalists to have been obtained in the United States, the previous most southern locality whence they had been taken being Labrador ; but the species had previously been observed in the breeding season by Dr. S. S. Haldeman as far south as Harper's Ferry, Virginia. One or more pairs of these birds have been seen about Mounts Tom and Holyoke every season since the first discovery of the eggs at the former locality in 1864. Mr. W. C. Bennett, of Holyoke, their discoverer, has since carefully watched them, and his frequent laborious researches for their nest have been well rewarded. In 1866, he took a second set of eggs, three in number, from the eyrie previously occupied. In 1867, the male bird was killed late in April, and this apparently prevented their breeding there that year, as they probably otherwise would have done. At least no nest was that year discovered. In 1868, hawks of this species were seen about the mountains, and although they reared their young there, all effort to discover their nest was ineffectual. The present year (1869), they commenced to lay in the old nesting place, but as they were robbed when but one egg had been deposited, they deserted it and chose a site still more inaccessible. Here, they were equally unfortunate, for during a visit to this mountain, in company with Mr. Bennett (April 28th), we had the great pleasure of discovering their second eyrie, and from which, with considerable difficulty, three freshly-laid eggs were obtained. Not discouraged by this second misfortune they nested again, this time depositing their eggs in the old eyrie from which all except the last set of eggs have been obtained. Again they were unfortunate, Mr. Bennett removing their second set of eggs, three in number, May 23rd, at which time incubation had

believed to have a nearly cosmopolitan distribution, but since then the Australian and other supposed species have been separated from it on grounds that it now seems should be reconsidered. (Bulletin of the Mus. Comp. Zoo., Vol. II., page 317. Allen.)

just commenced. The birds remained about the mountain all the summer, and from the anxiety they manifested in August, it appears not improbable that they laid a third time, and at this late period had unfledged young. The first set of eggs and the female parent, collected April 19th, 1864, are in the Museum of Natural History at Springfield, as also a male killed subsequently at the same locality in April; the second set, collected in April, 1866, are in the cabinet of Mr. E. A. Samuels; the third and fourth sets, collected April 28th and May 23rd, 1869, are in that of Dr. William Wood, of East Windsor Hill, Conn. Although in each set the different eggs sometimes varied considerably from each other, neither of the three last present that remarkable range of variation exhibited by the first. It is probable that some years more than one pair have nested on Mount Tom, but only one nest-site had been discovered before the present year. I learn from Dr. Wood that this bird is every year seen also about Talcott Mountain, and that it probably regularly breeds there. The young obtained from it in 1862 Dr. Wood kept till the following fall, when they were sent to Professor Baird, and died at the Smithsonian Institution the succeeding spring."

As few ornithologists have had the good fortune to meet with the eyrie and eggs of the Duck Hawk, and since it is not improbable that these birds may yet be found to nest in Canada, I add some further details of interest respecting the eyrie on Mount Tom, near Springfield, Massachusetts. The account from which these are taken is the most complete and interesting ever published on this subject, and is the only one in which the eggs of the bird are described at any length.

"Although the Duck Hawk has been long known to breed at the localities in Massachusetts mentioned above (Mounts Tom and Holyoke), those conversant with the fact were not aware that any special interest was attached to it, or that its eggs and breeding habits were very little known to ornithologists, and so, until very recently, no particular efforts have been made to procure the eggs. Mr. Bennett, becoming aware of this, resolved to procure the eggs. He accordingly visited Mount Tom for this purpose, April 6th of the present year (1864), when he searched the whole ridge of the mountain, discovered the old birds and the particular part they most frequented, and also the site of the nest, where the young had been raised. The old birds were continually near the spot, and manifested much solicitude when it was approached, often flying within six or eight rods, and once the female came within three, screaming and thrusting out her talons, with an expression of great rage and fierceness. The birds did not appear at all shy, being easily approached quite nearly, though in walking, the cracking of sticks and the clinking of splinters of trap-rock made no little noise. One of the birds appeared to keep close to the eyrie, and both would approach whenever it was visited, screaming at and menacing the intruder, notwithstanding that at that time there were no eggs. Mr. Bennett, suspecting that incubation had commenced, visited the locality again

on the 9th, but only saw the old nest, the birds behaving as before. Ten days later he made another visit, and, creeping carefully to the summit of the cliff, at a point near the eyry already spoken of, he saw the female, on looking over the cliff, sitting on the nest, and but five or six yards distant. She eyed him fiercely for an instant, and then, scrambling from the nest to the edge of the narrow shelf supporting it, launched into the air. In a twinkling Mr. Bennett's unerring aim sent her tumbling dead at the foot of the precipice several hundred feet below. The nest contained four eggs, which were soon safely secured, and the body of the female was obtained from the foot of the cliff. The male soon coming about was shot at, but he was too shy to come within range, excepting once when the gun was being reloaded. The eggs were all laid after April 9th, and their contents showed, April 19th, that they had been incubated but a day or two. Incubation seems, in this case, to have commenced several weeks later than usual, which may have been owing to the late snows and unusual coldness of the weather this year during the first half of April. The situation of the eyry was near the highest part of the mountain, about one-third of the length of the mountain from its south end, on a narrow shelf in the rock, eight or ten feet from the top of a nearly perpendicular cliff, 150 or 200 feet in height, and was inaccessible except to a bold climber, and at one particular point. The nest was merely a slight excavation, sufficient to contain the eggs; no accessory material had been added. The site had been previously occupied, and probably for several years; and for weeks before the eggs were laid was carefully guarded by the bold and watchful birds." Coues says, "These four eggs averaged 2.22 long by 1.68 broad, with 2.32 by 1.71, and 2.16 by 1.65 as maxima and minima, respectively. The smallest was larger than the one measured by Dr. Brewer (2.00 by 1.56), which he obtained in Labrador. They also varied considerably in contour, and in heaviness and extent of coloration they showed a series from the darkest and most nearly uniform to the lightest and most sparsely marked, in which latter the contrast between the white ground and the blotches was striking."

Description of the darkest Egg. "The general color is chocolate brown, darker and more dense and uniform about the ends, the part about the middle being lighter, varied with small irregular blotches and specks of a darker tint than the ground color. The color of the smaller end is a nearly uniform dull red-ochre. There is also an irregular belt of scattered and apparently very superficial blotches of very dark brown or nearly black."

Description of lightest Egg. "The greater end of the egg, which in the egg of most birds is the end most subject to markings and to the greatest depth of color, is white, sprinkled sparingly with reddish specks; while the smaller end is deep bright brick-red, here and there relieved by small specks and patches of white ground-color. About the middle of the egg the colors are in more equal proportions, the white patches becoming larger on the smaller end toward the middle, and the red patches on the larger end increase toward the same point, where the colors

meet and become mixed in irregular patches of various sizes, from mere dots to blotches."

Sp. Char.—*Adult*—Frontal band white. Entire upper parts bluish cinereous, with transverse bands of brownish-black, lighter on the rump. Upper parts yellowish-white, with cordate and circular spots of black on the breast and abdomen, and *transverse* bands of black on the sides, under tail coverts, and tibiæ; quills and tail brownish-black, the latter with transverse bars of pale cinereous. Cheeks with a patch of black; bill light blue; legs and toes yellow. Iris yellow. Sexes alike.

Younger.—Entire upper parts brownish-black, frontal spot obscure, large space on the cheeks black. Under parts dull yellowish-white, darker than in adult, and with *longitudinal* stripes of brownish-black; tarsi and toes bluish lead-color. Iris yellow. Total length, 18 to 20; wing, 14 to 15; tail, 7 to 8 in.

Falco Columbarius, LINNE.

THE PIGEON HAWK; MERLIN; "LITTLE CORPORAL."

PLATE II.

This beautiful little Falcon is that described by Wilson and subsequent American writers generally, as the *Falco Columbarius;* by Swainson as the *Falco aesalon;* and by Audubon, *Falco temerarius,* or "Little Corporal." It inhabits not only the whole of the Canadas, but likewise the fur countries to a very high latitude, the States on the Atlantic, and the entire coast of the possessions of the United States on the Pacific Ocean. Consequently the species may correctly be said to be distributed over the whole of North America, excepting the extreme Arctic regions. We have met with it on every expedition, and in every locality visited between Fort William on Lake Superior, and the Gulf of the St. Lawrence; and between this river and its Great Lakes, and the height of land to the northward. But although everywhere met with it nowhere can be said to be numerous, and no great number of specimens have yet been obtained during any one summer. The numbers, however, vary considerably in different years; a fact which is also true of most of the other species of the Falconidæ. The Pigeon Hawk is subject to great variations in plumage, and therefore it is not surprising to find it described under a variety of names in ornithological works. Specimens in our collections of immature individuals show almost unaccountable diversities, not only in the style of coloring, but likewise in dimensions; some of these bearing a striking resemblance to the *Accipiter fuscus,* Bon., or Sharp-shinned Hawk. According to Cassin, however, there are three well defined stages. Of these the adult is easily distinguished and is very nearly as figured by Audubon under the name *Falco temerarius,* but of the other two plumages it is difficult at present to determine which is the more mature. These three stages are easily discernible in our collection of Pigeon Hawks. That of the adult, however, is the least frequently occurring form, and may be given as one bird in twenty. What I consider to be the second stage, or that intermediate between the bird of the first

year and the adult, is that in which the entire upper plumage is either of a light ashy or dusky brown; entire under parts dull white with longitudinal stripes of light brown; tail light brown, with about six white bands. The third or youngest stage, or first year bird, has the upper plumage of a much darker shade of brown, approaching to black; tail still darker, and with four bands of dusky white. The cere and feet vary in all these stages from a decided yellow to a dull greenish yellow. Besides these there are a few other forms intermediate to the *adult, younger* and *young* stages, which I cannot at present occupy space in describing. In former years, when Canada was more the great breeding resort of our Wild Pigeon (*Ectopistes migratoria*, Swain), than it is at present, the Pigeon Hawk was much more abundant. It then arrived with the armies of these birds in early spring, and was by far the most common species of hawk to be met with in the country. Then countless numbers were observed in a single day's excursion, while of late years hardly one dozen specimens have been obtained during a summer's ramble.

The Pigeon Hawk, though of small size, is a fierce and most courageous bird, and does not hesitate to attack birds of much larger size than itself. It preys not only upon pigeons, but also upon black birds, rice birds, squirrels, mice and beetles. On one occasion in Madoc, Ontario, I observed a female hawk of this species making desperate attempts to obtain the young of the Ruffed Grouse, which the parent bird, however, most ably defended. The Golden-winged Wood-peckers (*Colaptes Auratus*, Swain), and particularly the young of this species, are also a favorite prey of this hawk. Reeks, in his notes on the birds of Newfoundland, says, "Its food consists chiefly of small birds, especially some of the smaller species of *Tringae*, which abound on the coast in the fall of the year." It is a summer migrant to Newfoundland, and is said to be "tolerably common." The Pigeon Hawk undoubtedly breeds in many parts of Canada, but its nidification has not been recorded from actual observation by many of our collectors, although the eggs of the bird occur in a number of collections. I am of the opinion that in choosing its

nesting site it observes somewhat of the cunning of the Peregrine Falcon or Duck Hawk, and selects some secluded and almost inaccessible position. According to Hutchins, as given in the Fauna Boreali-Americana, it makes a nest on rocks and in hollow trees, of sticks and grass, lined with feathers. A nest found in Labrador by Audubon was in a low fir-tree, ten or twelve feet from the ground, built of sticks, and lined with moss and feathers. In northern New England, according to Boardman, it nests in hollow trees. Coues, in his "Birds of the North-West," gives "an unquestionable description, derived from examination of specimens in the Smithsonian." He says, "The size varies from 1.50 by 1.30 to 1.80 by 1.30—figures also indicating the range of variation in shape, some being subspherical, others elongate-oval. Coloration ranges from a nearly uniform deep rich brown (chestnut or burnt sienna) to whitish or white only, marked with a few indistinct dots of dull grayish or drab. Such extremes are connected by every degree, a yellowish-brown ground color, irregularly splashed with rich ruddy brown is the usual style. The markings may be very evenly distributed, or mostly gathered in a wreath around one or the other end, or even both ends." Whether *our* Pigeon Hawk, *Falco Columbarius*, is the same bird as the European Merlin, *Falco æsalon*, is still an open question with many of our ornithologists. Swainson, in the Fauna Boreali-Americana, and in a note under Richardson's description of the *Falco æsalon*, says, "The specimen killed at Carlton House is, beyond doubt, an old female Merlin, just beginning to have its new feathers, several of which, darker and more cinereous, are to be seen on the sides near the hind part of the neck." He here undoubtedly is drawing from his experience of the British Merlin; and the question naturally arises, may not this bird, as well as the *Falco Columbarius*, inhabit Northern America? or are we to consider these two species as representing distinct geographical races of but one species? On this interesting question, Reeks, in his list of Newfoundland birds, throws some valuable light. He says, "Since my return (to England) I have compared specimens of this species (*F. columbarius*) with others of *F. æsalon* (Merlin), and, although I cannot find any material or reliable difference in

size, the species are easily separated by examining the tails. Both sexes in *F. columbarius* have *four distinct* black bars—three exposed and one concealed by the upper tail-coverts. In *F. æsalon* the female *only* has the tail-bars distinct, and they are *six* in number—five exposed and one concealed. The bars on the tail of the adult male *F. æsalon*, although *six* in number, are only partially defined, and consequently very indistinct. The bill of *F. æsalon* is slightly more compressed laterally but not so much so horizontally as that of *F. columbarius*. The tibiæ in my adult male specimens of the American bird (*F. columbarius*) are darker ferruginous, with narrower longitudinal lines than in my English specimens of *F. æsalon*; but this distinction may not be constant. I had almost forgotten to state that the inner webs of the tail-feathers of *F. columbarius* are white, except where crossed by the black bars—in this respect differing from *F. æsalon*, which has scarcely any variation in either web, both being bluish ash." Again, in Coues' "Birds of the North-West," we find a distinct place assigned to the Merlin, under the heading *Falco Richardsonii* (Ridgeway), AMERICAN MERLIN. To this bird he further gives a defined habitat, namely, "Interior of North America, U. States, from the Mississippi to the Rocky Mountains, Arctic America." Previous to the publication of the work just cited from, and in 1866, the same writer stated as follows: "In the immense series of Pigeon Hawks which I have examined from all parts of the West, I find a few specimens which constantly differ to a marked degree from any of the diverse plumages in which *F. columbarius* presents itself. These specimens are invariably much larger than any others in the series; are much lighter colored, and differ constantly in the increased number of light and dark bars on the tail. Compared with a European specimen of *F. æsalon*, they agree in every particular. I think it most probable that future careful research will demonstrate the existence of a species hitherto usually confounded with *F. columbarius*." We have found the same resemblances and diversities in our collections of Canadian specimens, but among these there are one or two which correspond closely to that described as *F. æsalon* in the Fauna Boreali-Americana. Ridgeway, moreover, has detected some further differences

I believe between our *F. æsalon* and the European bird, and is inclined to consider them as belonging to different geological races. From the examination of a great number of specimens of the bird commonly ticketed in our public and private collections, "Pigeon Hawks," however, I cannot bring myself to conclude otherwise than that we have but one species, varying, indeed, greatly in the coloring and often in dimensions, but not more so than is met with in the individuals of the Rough-legged and Red-tailed Hawks (*A. lagopus* and *B. borealis*), and many others. I cannot speak from experience of the *F. æsalon* of Europe, having seen only a few indifferently preserved specimens of this bird, but I may state that I attach considerable importance to the statements made by Reeks, and already given in this article, respecting the differences between it and the *F. columbarius*.

Dr. Richardson's *Falco æsalon* was an old female, shot at the Carlton House on the Saskatchewan, May 14th, 1827, while flying with her mate: "In the oviduct there were several full-sized white eggs, clouded at one end with a few bronze-colored spots." Richardson further adds, "Another specimen, *probably* also a female, was killed at the Sault St. Marie, between Lakes Huron and Superior, but it could not be preserved." Since the dates of these occurrences of the *F. æsalon* I doubt if altogether six other specimens, answering to Richardson's plate and description, have been obtained in Canada; consequently if the species is to be considered as valid, it must be an exceedingly rare one. With the view, however, of presenting this whole question fairly to our naturalists in the Dominion of Canada,—for whom this monograph is especially intended,—I append descriptions of both birds, namely, the Pigeon Hawk (*Falco columbarius*, Linné), and the American Merlin (*Falco Richardsonii*, Ridg.), of which last additional specimens are a special desideratum. The first of these is by Cassin, and the latter by Ridgeway.

PIGEON HAWK, *Falco Columbarius*, Linné.

Adult Male. Entire upper parts bluish slate color, every feather with a black longitudinal line; forehead and throat white, other under parts pale yellowish or reddish white; every feather with a longitudinal line of brownish black; tibiæ light ferruginous, with lines of black. Quills

black, tipped with ashy white; tail light bluish ashy, tipped with white and with a wide subterminal band of black, and with several other transverse narrower bands of black; inner webs nearly white; cere and legs yellow; bill blue; iris dark-brown.

Younger. Entire upper plumage dusky-brown, quite light in some specimens, and with a tinge of ashy; head above, with narrower stripes of dark brown and ferruginous, and in some specimens many irregular spots and edgings of the latter color on the other upper parts. Forehead and entire under parts dull white, the latter with longitudinal stripes of light brown; sides and flanks light brown, with pairs of circular spots of white; tibiæ dull white, with dashes of brown; tail pale brown, with about six transverse bands of white. Cere and legs greenish yellow.

Young. Upper plumage brownish black, white of the forehead and under parts more deeply tinged with reddish yellow; dark stripes wider than in preceding; sides and flanks with wide transverse bands of brownish black; and with circular spots of yellowish white. Quills black; tail brownish black, tipped with white, and with about four bands of white; cere and feet greenish yellow.

Total length—Female: 12 to 14 inches; wing, 8 to 9 inches; tail, 5 to 5½ inches.
" —Male: 10 to 11 inches; wing, 7½ to 8 inches; tail, 5 inches.

Iris in all stages dark-brown, *never yellow.*—H. G. V.

American Merlin. *Falco Richardsonii*, Ridgew.

Adult Male. Upper plumage dull earth brown, each feather grayish-umber centrally, and with a conspicuous black shaft line. Head above, approaching ashy-white anteriorly, the black shaft-streaks being very conspicuous. Secondaries, primary-coverts, and primaries, margined terminally with dull white; the primary-coverts with two transverse series of pale ochraceous spots; primaries, with spots of the same, corresponding with those of the inner webs. Upper tail coverts tipped and spotted beneath the surface with white. Tail, clear drab, much lighter than the primaries, but growing darker terminally, having basally a slightly ashy cast, crossed with *six* sharply defined, perfectly defined, perfectly continuous bands (the last terminal) of ashy white. Head frontally, laterally and beneath—a collar round the nape (interrupting the brown above),—and entire lower parts white, somewhat ochraceous, this most perceptible on the tibiæ; cheeks and ear-coverts with sparse, fine, hair-like streaks of black; nuchal collar, jugulum, breast, abdomen, sides and flanks, with a median linear stripe of clear ochre-brown on each feather; these stripes broadest on the flanks; each stripe with a conspicuous black shaft-streak; tibiæ and lower tail-coverts with fine shaft-streaks of brown, like the broader stripes of the other portions. Chin and throat, only, immaculate. Lining of the wings spotted with ochraceous-white and brown, in about equal amount, the former in spots approaching the shaft. Inner webs of primaries with transverse broad bars of pale ochraceous—eight on the longest.

Wing, 7.70; tail, 5.00; tarsus, 1.30; middle toe, 1.25.

Adult Female—Differing in coloration from the male only in the points of detail.

Young Male—Differing from the adult only in degree. Tail-bands broader than in the adult and more reddish; the terminal one twice as broad as the rest, and almost cream color. Wing, 7.00; tail, 4.60.

Falco Sacer, Forster.

FALCO CANDICANS, Gmelin.

GYR FALCON; "SPECKLED PARTRIDGE HAWK."

PLATE III.

Through the very great kindness of the Rev. Duncan Anderson of Spruce Cliff, Levis, Quebec, I am enabled herewith to present an accurate photograph of the rarest of all "Our Birds of Prey," the Gyr-Falcon of northern North America; or the "Speckled Hawk" of the Hudson's Bay Territories. This specimen was shot upon a flagstaff at the "Bay of Seven Islands," about 350 miles below Quebec, during the month of May 1865. It was skinned by a squaw and sent to Dr. Russell of Quebec, who subsequently presented it to Mr. Anderson, in whose collection it yet remains. The skin as an ornithological specimen was in a miserable condition. No antiseptic whatever had been used, while the skull bones had been completely removed, and in fact every bone that should have been left in. The bird had consequently to be set up entirely by eye-measurement, and the total length given in the appended description of it may not therefore be exactly correct. The sex and the color of the eyes could not be ascertained. Mr. Anderson says, "No other bird of this species has been seen in the neighborhood of Quebec, nor am I aware that it is represented in any of our museums or private collections." Two specimens, however, in the dark stage — a young male and an old female — corresponding to Audubon's *F. labradora*—were taken near Montreal, and are now in the Museum of Nat. Hist. in this city. Mr. Anderson further writes me, "The individual who shot my specimen, a keen observant hunter, who has resided for upwards of forty years on the north shore of the St. Lawrence, states that he has never seen during that time but one other bird of the same kind. As to my own experience, I have to acknowledge that many weeks of patient wandering among the rocks of the North Shore have failed to procure me even a passing glimpse of this "*rara avis*."

The Gyr-Falcon does not appear to have been met with in any of its varieties by Wilson, as it is not enumerated amongst the birds of the United States either by him or Bonaparte. It is a strictly boreal species, being found northward to the Arctic Sea, and probably, according to Richardson, "in the most northern of the Georgian Islands." It is well known to frequent Iceland; and Sabine met with it on the west coast of Greenland, as high as latitude 74°. Richardson states that it is common on the "Barren Grounds," where it preys on the Ptarmigan, also Plover, Ducks, and Geese, and that it sometimes in winter follows the southward flight of these. The southern limit of its range, however, is by no means clearly known. Mr. Anderson's specimen here figured, the two in the Montreal Museum, and the other seen by the hunter who shot the first mentioned, are the only known occurrences of this rare bird in Canada. It has been occasionally met with in the New England States, and Coues states that it is a "rare winter visitant, and only accidental as far south as Massachusetts." It has also been observed in Maine. One specimen of the speckled plumage was taken near Providence Rhode Island, by Mr. Newton Dexter, during the winter of 1864 and 1865; but Allen, who records this, adds, "Its occurrence so far south appears to be wholly accidental."

According to some of our best ornithologists there are two species of the Gyr-Falcon: the *Falco candicans*, and the *Falco Islandicus*. Others again unite these two under the *Falco Sacer*, of Forster. In a paper entitled "Notes on some of the rarer Birds of Massachusetts," Mr. J. A. Allen says, "The suspicion many authors have had that the *Falco candicans* and *F. Islandicus* were but birds of the same species in different stages of plumage, my own examination of the specimens of both in the Museum of the Boston Soc. of Nat. Hist. and elsewhere, has led me to believe is actually the fact. Sabine, so long ago as 1819, I think has fully shown this in his remarks on *F. Islandicus* in his 'Memoire on the Birds of Greenland.' According to the late lamented Mr. Cassin, *Sacer* is the specific name which has priority for this species." The *F. Labradora* of Audubon is simply the

dark variety, or stage of plumage of this bird to which I also refer that on the succeeding plate. Coues, in his "Catalogue of the Birds of North America contained in the Museum of the Essex Institute," says, "The Gyr-Falcon which visits New England is variously given as 'Islandicus,' or 'candicans.' I do not know which is really the proper name, nor whether more than one species be found. I believe it is still an open question among ornithologists whether these two names do not refer to the same species; or, in other words, whether there is really more than a single species of Gyr-Falcon. Mr. John Cassin in his reply to some enquiries of mine upon this subject kindly furnishes me with the following: 'I regard the species of Hierofalco of North America as the F. candicans of authors (*e.g.*, Bon. Consp. Av. etc.) F. cincereus, Gmelin; F. Groénlandicus, Daudin; F. Labradora, Aud. (name on plate); F. Sacer, Forster; which last is the name which has priority.'"

Mr. Anderson, of Levis, Quebec, writes to me under date of 15th March, 1876, as follows: "Taking Prof. Newton's plan, I feel satisfied, at least if the Prof. is correct, that my bird is the Falco candicans. I suspected this before, but lacked sufficient data to work upon." This plan of Newton's here referred to is contained in a letter addressed to E. Coues, Esq., M.D., by Alfred Newton, Prof. of Geology in the University of Cambridge, Eng.,* in which, after stating that Cassin's notice of the Gyr-Falcon in his "Birds of North America" is all wrong, he writes as follows:

"The first thing to be fully impressed with is that these large Falcons have exactly the same changes of plumage as Falco Peregrinus or F. Anatum (supposing they are distinct), *i.e.*, the young in their first plumage are marked longitudinally, and this plumage they keep until their *second* autumn, when the fully adult plumage is assumed. In saying this I do not mean to declare that the moult is a matter of a very short time; on the contrary, I have reason to believe that in most examples it lasts for some months; but by the end of their second autumn they are in full adult plumage. All that has been said about these birds growing whiter and whiter as they grow older is founded on mere speculation and fancy. The main differences between immature and adult plumage are that the browns become grays and the longitudinal markings transverse. None of the European dealers understand this;

* Published in Proc. A. N. S., Phila., 1871. Part II., p. 94.

and if you have skins from Paris, you will find, I am sure, young white birds marked "*tres adulte*," and old blue birds "*jeune*." It is the same with specimens from Copenhagen and elsewhere. Now it being understood that, as I have said above, the age of the bird may be detected from the color and, still better, from the directions of the markings, it will then be evident that in a large series you have what at first sight appears to be almost every step from the nearly pure white phase—which some consider, though I do not, to be the F. arcticus of Holböll—to the dark colored F. labradora of Audubon, and it is not easy to see how they can be distinguished. Easy it is, however. Sort out all the specimens with white bills and claws (white often flesh color), and then you will have *F. candicans*. Then turn all the other specimens on their bellies, and lay in one heap those that have the tops of their heads *not darker* than their backs, and on another those that have the tops of their heads *not lighter* than their backs. The first of these heaps will be F. islandicus, and the second F. Gyr-falco. You will perhaps have some five per cent. that this will not reach, and this remainder will require further comparison; but I am much mistaken if the 'moustache' will not enable you to distribute the balance. . . . The adults will be from the countries where each one breeds, and the young from those to which they wander (generally in the autumn or winter)."

Reeks in his notes "On the Birds of Newfoundland," says, "This is the 'White Hawk' of the Newfoundland settlers. It is pretty regular in its periodical migrations, especially in the fall of the year. I was not successful in obtaining specimens; I do not think it breeds in any part of Newfoundland."

Mr. Wm. Couper, naturalist, of Montreal, informs me he obtained one specimen of this bird shot at St. Foy in 1860. It was in its first year's plumage. This specimen is now in the collection of the Smithsonian Institute at Washington, D.C. Mr. Couper says he is convinced that *Islandicus* is the adult bird.

The following is a description sent me by Mr. Anderson of the bird figured on the accompanying plate:

Adult. The ground color white; head and upper part of neck creamy white, gradually blending into pure white; on lower part of neck behind, narrow longitudinal pencillings of brown; along the back feathers and over the wings, elongated spots of brown, changing into a broader and saggital form towards the extremities of the primary feathers of the wings, and on the

rump, becoming narrower and more elongated. The extremities of the primary quill feathers brown, relieved by a narrow terminal border of white on each; the shafts of nearly all the feathers having brown markings of the same color as the other markings; under parts entirely white, with a few elongated and very narrow pencillings along the breast and sides of the abdomen; the leg feathers pure white; tail rounded; five feathers on each side pure white, the shafts of the two middle ones brown throughout to within about one inch of the extremities, beyond which they are white; bill light bluish, slightly darker towards the tip of the upper mandible; claws, bluish white. Total length, about 22 inches; wing, 15 inches; tail, 9 inches.

Falco Sacer, FOSTER.

FALCO LABRADORA, AUD. *(Dark Stage.)*

THE GYR FALCON; DAWSON'S FALCON.

PLATE IV.

I would draw special attention to the bird figured on this plate. It has never before appeared in any ornithological work, and indeed is unknown to most naturalists. There are but two specimens of it preserved in Canada, and possibly in the whole of North America. The following is their history:—About twenty years ago, there was brought into one of our markets in Montreal a singular and unusually large Hawk or Falcon. This fortunately was purchased, and eventually found its way into our Museum of Natural History. For some time this stuffed specimen attracted a great deal of attention among our naturalists and local ornithologists, none of whom remembered having ever seen one altogether like it. After receiving the usual amount of handling, however, the interest caused by its first appearance subsided, and the bird was carefully ticketed and placed in—the usual receptacle for stuffed birds,—an upright glass case. Here it remained for about five years, attracting but little attention. In the autumn of 1861, however, a relative of Mr. Wm. Hunter's, the taxidermist of the Society, had the good fortune to shoot at Lachine (near Montreal), a second specimen of this species, which happened to be a young male. This was skinned, preserved and beautifully mounted by Mr. Hunter, and presented by him to the Nat. Hist. Society of Montreal. The second occurrence of this rare bird again aroused the attention of our naturalists, and among others that of the late Dr. Archibald Hall, who for some time had been engaged on a list of the Mammals and Birds of the District. After due examination Dr. Hall concluded it to be a new species, described and added it to his list under the name of *Falco Dawsoni* (new species Hall!)—"after the esteemed Principal of McGill College." In his description of it, Hall says, "It

bears some resemblance to Prof. Cassin's *Heirofalco sacer*, especially his description of the young bird, but differs from it in having the claws black; and the under part of the claws are not greenish-yellow, but of the same hue as the tarsus; and the general tint of the dark parts of the plumage is not brown, but emphatically slate color. It also somewhat resembles the description given by the same gentleman of the *F. atricapillus* or *plumbarius*, but differs in having greenish-blue tarsi, and a bluish cere, with black irides." From the date of the capture of this last specimen (1861) up to the present year (1876), no other individuals of this rare bird have been met with, and the two birds have remained ticketed in our museum as the *Falco Dawsoni* (new species Hall!) Recently, however, through the kindness of the Council of the Nat. Hist. Soc., both of these birds were placed at my disposal for re-examination and comparison for the present work, and I was enabled notwithstanding the indefinite colors of their plumage to obtain two beautiful and truthful photographs of them. Being strongly impressed with the general likeness of these to the bird figured and described by Audubon as the *Falco labradora*, but unable to satisfy myself as to their identity, I forwarded the photographs to Baird and Ridgeway of the Smithsonian Institution at Washington, referring these authorities to Hall's description of the bird in the Canadian Naturalist and Geologist. Shortly afterwards, under date of March 11th, 1876, Baird wrote as follows: "I have submitted your notes to Mr. Robert Ridgeway for his criticism, and I give you his replies herewith: Dawson's Hawk is the younger plumage of the same bird as that described by Audubon as *Falco labradora*, and is one of the local varieties of the Gyr-falcon. I may perhaps write you more fully on the subject hereafter." In a postcript to this same letter, he adds, probably after a further examination of the plates, "There is no doubt that *F. Dawsoni* is the dark stage of *Falco Gyr-falco* given as *F. labradora* by Audubon."

This bird, in one or other of its varieties or stages, it is only natural to suppose, may again be taken in some portion of our Dominion. I therefore, to assist in its identification, append Dr. Hall's original description of it. The portions within brackets are

corrections made by myself, the same specimens being before me from which the description was originally taken.

SP. CHAR. Bill stout, strongly toothed in upper mandible, the tooth corresponding with a notch in the lower one, of a bluish color, terminating in a black tip, which is the color of the cere and irides. Tarsi feathered half way to the toes, of a dark greenish blue. Toes long, moderately strong, claws black and much curved. Eyelids dirty white, this color forming a complete circle round the eyes.

Dorsal aspect. The prevailing color is a dark slate color, tipped with cinereous on the back of the neck, interscapulars and secondaries, and with rufous on the back, the upper tail coverts tipped with dirty rufous white (in one of the specimens). Many of the secondaries have a rufous white rounded spot near the end of their outer vanes. Tint of the upper part of the tail of a brownish slate color, with about 11 to 14 bars of light rufous terminating in rufous white near the tip, the tail tipped with the same color. The tail consists of about 11 feathers (12), the extremities of which are all rounded.

Ventral aspect. Chin and upper part of throat whitish, each feather having a narrow streak of slate color along its shaft. The prevailing tint, like that of the back, is slate color, (darker tint), but differing from the back in that each feather has the outer vane white, with an irregular long white spot on the inner vane, leaving the central position of the prevailing color. Femorals as long as the tarsals, the white on the feathers here assuming almost a banded or barred appearance, which in the female is distinctly so. Under tail coverts of alternate rufous white and slate colored bars. The under surface of the tail exhibits a rufous tint, while the bars are more distinctly seen.

2nd primary longest; 1st shorter than the 3rd, but longer than the 4th: inner vanes of the primaries barred with white.

The female, which resembles the male in every respect except the bars on the femorals, had its bill a good deal worn, thus indicating it to be an old bird. Length of the male (taken from a dried mounted specimen) 23½ inches. Alar expanse 38 inches. That of the female (still older specimen) 27½ inches, with an alar expanse of about 42 inches.

Falco Sparverius, LINNÆUS.

THE SPARROW HAWK.

PLATE V.

The species figured on this plate is the smallest, most beautiful, and perhaps the best known of the whole family; in fact so universal is its diffusion and so commonly is it met with, that I need do little but present its photograph. Its habitat is the entire continent of America, and it nests in every section between the fur countries and Mexico. Small as this bird is it is nevertheless a true falcon, and is possessed of great courage and audacity. In Canada we have met with it everywhere and on every expedition during each month between April and November. According to Richardson it breeds in considerable numbers on the banks of the Saskatchewan in the neighbourhood of Carlton House, arriving there in the month of April, laying its eggs about the middle of May, and retiring southward on the approach of winter. It does not appear to be a very northern species, as Ross of the McKenzie river district gives it as "North to Lapierre's House. Rather rare;" and Richardson states that "It was not observed on the route of the expedition beyond the fifty-fourth degree of latitude." It has been asserted by more than one writer, that the Sparrow Hawk seems never to build a nest for itself, but occupies the holes made by Woodpeckers, abandoned Crows' nests, and in some instances a dove-cote. This is simply absurd, as most of our Canadian *field* collectors know that it is by no means an unusual occurrence to find it occupying a nest of its own construction, to which the same pair of birds return yearly. I have seen its nest placed in the hollow at the end of a birch tree, that had been broken off some ten or twelve feet from the ground, and which also contained the nest of the Red-headed Woodpecker. The entrance to the Woodpecker's abode was only seven or eight inches beneath the base of the Hawk's nest. This tree was cut down, and the portion containing both nests kept. The Hawk's nest was constructed of twigs, moss, marsh-grass, and

was lined with feathers. We have also, however, found this bird occupying the excavations made by Woodpeckers, as well as the abandoned nests of other Hawks. McIlwraith of Hamilton, states, that there the Sparrow Hawk frequents dry and sandy places, and breeds in Woodpeckers' holes. The eggs I have seen were of various shades of yellowish-brown, with darker dottings or splashings, chiefly towards and at the larger end; and a few were met with of a pale yellowish white color, with but few spots. There is no end to the variety of coloring and marking displayed in any large collection of eggs of this species. My own experience has been that the earlier in the season the eggs were obtained the fewer were the pale or light colored ones, and the later the rarer the darker colored and blotched ones. In other words, the first eggs laid by these birds on their arrival in spring are the freshest and most marked in color; while subsequent clutches contain a much larger proportion of the paler colors.

It is, I think, pretty well known, that in some instances on record in which a bird has been repeatedly robbed of its eggs within a short season, and obliged to lay three or four times its usual number, that these towards the last became of a very much lighter and different color from those first laid, and were occasionally even without any of the usual markings. The same diversities of size, form and color among eggs of the same clutch have been observed and recorded in the case of nearly every species in this whole family, and we "see how utterly worthless are such discrepancies as a means of deciding a mooted question of specific identity, or the reverse, in nearly allied birds. Yet some ornithologists will compare a single egg with another, gravely note the differences, and thereupon proceed to an argument with still denser gravity."* The eggs of the Sparrow Hawk are nearly spheroidal, measuring about 1.33 by 1.12; from 5 to 6 eggs are the usual nest-full, but sometimes one more is added; three to four birds, however, are the average number hatched. The Sparrow Hawk is subject to wide variations in the color of its plumage, but, as has been remarked by Cassin, these "do not

* Coues. Birds of the North-West.

appear to be constant, nor peculiar to any locality." The sexes are unlike, the adult female being not only the larger bird, but differing further in being banded transversely on the upper parts, much in the same manner as the young birds.

The Sparrow Hawk lives well in confinement, and causes considerable amusement to his captors by his drolleries. Many anecdotes are told of this bird in captivity, but most of these have already appeared in our popular works on ornithology. The following, however, related by Coues in his "Birds of the North-West," is new. He says: "While I was at Columbia, in South Carolina, a neighbor had three Sparrow Hawks for some time. As they had been taken from the nest when quite young, they became in a measure reconciled to captivity. They ate any kind of meat freely, and as they grew up, began to display much of their natural spirit. When tormented in the various ingenious ways people have of 'stirring up' caged birds, they would resent the indignity by snapping the bill, beating with the wings, and clutching with their talons at the offending cane or umbrella-tip. One of them was a cripple, having a broken leg very badly set, and the other two used to bully him dreadfully. One night, whether from not having been fed sufficiently, or being in unusually bad humor, they set upon him, killed him outright, and then almost devoured him before morning." Dr. Wood of East Windsor Hill states that a few years since a pair of Sparrow Hawks attacked and killed a pair of doves, took possession of their dove-cot and laid four eggs.

This Hawk is a summer migrant to Newfoundland, but Reeks states that it is not so common a bird as the Pigeon Hawk. It is a resident and abundant bird in Florida, where it breeds in March. According to Allen, "Florida specimens are considerably smaller than New England ones—the former being intermediate in size between the latter and the West Indian and South American representatives of this species, which have been regarded as distinct species, and to which various names have been applied by different writers. Audubon observes that he found this species in the Southern States, and more especially in Florida, so much

smaller than the northern birds, that he was at first inclined to consider them specifically distinct, but finally felt sure they were the same. The colors, as usual in other species, are generally brighter in the more Southern examples." It also inhabits Cuba, and has frequently been met with at other points to the southward as far as the Straits of Magellan. In California, Dr. Cooper describes this species as a constant resident, "frequenting chiefly the plains, and feeding on grasshoppers, mice, gophers, etc." He also notices its habit of frequenting the holes of Woodpeckers, in which it builds a nest.

The Sparrow Hawk arrives in Canada in April, but is most numerous in the early part of May. It breeds in many parts of the Island of Montreal.

Sp. Char. *Adult.* Frontal band and space, including eyes and throat, white; a spot on the neck behind, two others on each side of neck, and a line running down from before the eye, black; spot on the top of the head and upper parts behind neck, light rufous or cinnamon; under parts generally, pale rufous, frequently nearly white, with numerous circular oblong black spots; quills brownish-black, with white bars on their inner webs; tail tipped with white, and with a broad subterminal black band; back generally with transverse bars of black, but they are frequently very few or wanting; rufous spot on the head, variable in size, sometimes wanting.

Younger Male. Similar, but with the wing coverts, and tail ferruginous red, with numerous transverse bands of brownish-black; beneath with longitudinal stripes, and on the sides with transverse bands of brownish-black, external tail feathers palest; the broad subterminal black band obscure or wanting.

Young. With all the rufous parts of the plumage more widly banded with brownish black; wing coverts dark bluish cincereous, with large circular spots of black; beneath with longitudinal stripes and large circular black spots.

Length, 10.00 to 12.00; extent, 19.00 to 22.00; wing, 7.00 to 8.00; tail, 5.00 to 5.50.

The iris is a dark-brown, *never yellow;* bill, blue, black at tip; feet, orange; claws, black.

Sub-Family ACCIPITRINÆ, The Hawks.

Char. Form rather long and slender; tail and legs long; wings rather short; bill short, hooked; upper mandible with a rounded lobe instead of a tooth.

Forty or fifty species are known, distributed throughout the globe.

Genus **ASTUR**, Lacepede.

Gen. Char. Size rather long but slender; wings rather short; tail long; tarsi long, covered in front with rather wide transverse scalae; toes and claws moderate, the latter much curved and sharp; bill short; nostrils large, ovate.

About twelve species are known, inhabiting the forests of all countries. (Cassin.) One only is found in North America.

Astur Atricapillus, *(Wils.)* Jard.

THE AMERICAN GOSHAWK.

PLATES VI & VII.

This is undoubtedly the largest, and in mature plumage, the most beautiful of all our Hawks. It is also known as the "Ash colored" or "Black-cap Hawk," and occasionally as the "Black Hawk" and "Partridge Hawk." It is not an abundant species, although rather universally distributed over British America and the northern portions of the United States. In Canada it is a resident bird, and is met with more or less during every month of the year. In winter, however, the individuals are few, and consequently we may conclude that the majority are migratory, spending their winters not in the Southern, but in the more favorable portions of the Middle, Northern and Eastern States. According to numerous local lists which I have examined, the southern range of the Goshawk is from Maryland to Ohio, Kentucky, Kansas and California. In the fur countries it is met with to the shores of the Arctic Sea, but is rare in the extreme latitudes. Bernard Ross, of the McKenzie River district, gives it in his list as the "Black Hawk," and states that it is found northward to Fort Good Hope, but that it is rare. On the

west coast of America, Dall gives it as an abundant resident in the Yukon region; Drs. Cooper and Suckley, as of frequent occurrence in Oregon and Washington Territories. In the Missouri region, according to Coues, it is rare, "though doubtless of regular occurrence." Numerous observers give it as rare and only a winter visitant in the southern New England States. In Massachusetts, Allen states, "the Goshawk is a winter visitor, and, subsisting upon rabbits, partridges, jays, and such other birds and poultry as fall in his way, is a bird of considerable celebrity for his strength and boldness." In another paper, entitled "Notes on some of the rarer Birds of Massachusetts," the same writer observes—"This species varies most remarkably in the number of its representatives seen in different years, and also in the same season, in localities in southern New England not far apart. Some winters—the only season at which it is seen in Massachusetts—it is extremely rare, while the next it may be one of the most numerous species of its family. In years when it is generally common some of our most careful observers do not meet with it. Dr. Wood writes me under date of October 22nd 1868, that with him 'it has been a very rare winter vistor until the last winter, when they were more common than any of our rapacious birds. I mounted five specimens and sent away several for exchanges. I think twenty were shot within a radius of five miles. I have resided at East Windsor Hill twenty-one years, and have known only three specimens taken here prior to 1867.' At Springfield, Mass. less than twenty miles in a direct line north of East Windsor Hill, and at nearly the same elevation above the sea, I have known them to be quite common during several winters within the last few years." Mr. C. J. Maynard is confident that this species sometimes breeds in Massachusetts, which no doubt is correct, as it is known to nest in northern New York and the southern New England States. During the winter of 1869 it was particularly abundant in Massachusetts, and the same season Mr. Samuels received a dozen or fifteen specimens from near Boston. In Canada the numbers of these birds likewise vary greatly in different years. During some winters I have obtained large number of specimens from one or other of our markets,

while on the other hand sometimes five winters pass over in which not an individual is exposed for sale. It is now over ten years since they were at all common around Montreal, and the same has been the case in the neighborhood of Toronto and Hamilton. McIlwraith of the last city gives it in his "List of Birds observed near Hamilton, C.W.," as "rather rare; those procured being mostly in immature plumage." In summer, however, and on most of our expeditions, we have obtained specimens of this bird. It occurs but sparingly in the high land of eastern Ontario known as the "Opionga Mountains," between the St. Lawrence and Ottawa rivers, but more numerously on the slopes of these towards both rivers. It is rather abundant, and breeds in the section of country to the northward of the Ottawa, or that traversed by the rivers Gatineau, Lièvre, and Rouge. I did not notice it on any of the Manitoulin Islands, Lake Huron, and found it rare throughout both this lake and Superior. At and around Quebec it appears to occur rather less frequently than to the westward, and from that place to the Gulf of the St. Lawrence very few individuals have as yet been met with. In Newfoundland it was not observed by Reeks, but it is included in his list on the authority of the settlers, "as the more enlightened in ornithology recognised the plate of this species in Faun. Bor. Am., where the scientific name only is given." This is singular, for the plate is wretched.

I should have mentioned, while referring to Montreal, that the eggs of this bird were taken on the summit of the mountain there by Mr. Frothingham. Coues found it breeding in Labrador. Audubon speaks of its breeding in New York and Pennsylvania; but Coues says, "such instances of breeding as this must be, I think, exceptional." According to Dr. Brewer the egg of the Goshawk is 2 5-16 long by 1 15-16 broad, nearly spherical, roughly granulated, soiled white, with a faint bluish shade "marked irregularly with large but quite faint blotches of drab and yellowish brown."

The egg of this species collected by Mr. J. J. Frothingham, and now in the Museum of the Natural History Society, Montreal, measures a shade over 2 inches in length, and is barely 15/8 inches

in breadth ; its ground color is soiled bluish-white, with numerous but very faint markings. It much resembles the egg of Cooper's Hawk, but is invariably larger.

The sexes of this species are almost exactly alike in every thing but in size, the colors of the female, however, being less definite and paler. The young bird is not only very different in coloring, but is likewise considerably larger than either of the parents. In a number of collections in Canada, I have seen the young male labelled as the female, and it was only recently that I removed from my own cabinet, an immature female which had been for some years exhibited as an adult. On this point Dr. Wood, of East Windsor Hill, Mass., remarks: "The young are very unlike the adult both in size and markings; the young is the largest until after moulting, when the wing and tail feathers never again acquire their former dimensions. The same difference is observable in the Bald Eagle between the young and adult." Allen likewise observes: "The young are more plainly colored, and differ for several years so widely from their parents as to be hardly recognizable as belonging to the same species." The figure on Plate VII. is a life-like representation of a second-year bird; it certainly would hardly be recognized as the Goshawk.

I think I am correct in stating that it is still an open question whether our American Goshawk, and that of Europe are specifically distinct birds. Ornithologists of high standing appear on both the affirmative and negative sides of this question. For my own part, I must acknowledge that my opportunities of comparing our own with European birds have not been extensive, but from what few comparisons I have made, and from such conversations as I have had with collectors from Britain, I cannot conclude otherwise than that the differences pointed out by many writers between them are trivial, as compared with those known to exist in individuals of some allied species. And further, among specimens of the Goshawk obtained in North America, there are some that differ more when compared with one another than they do alongside a series of European birds. In support of this statement I would draw attention to the following

notice of variations in color presented by some specimens from Massachusetts and Maine. "Ordinarily this species has each feather below centered with a longitudinal dark shaft-line, with several transverse, broader but somewhat irregular, dark ashy-brown bars on a lighter ground. Some specimens, however, as one from Maine, have the transverse bars so narrow and broken that the lower surface presents a nearly uniform, minutely mottled appearance. Another specimen from Springfield, Mass., represents the opposite extreme, it having the transverse bars broad, regular, and quite far apart, so that its resemblance to average specimens of *Astur palumbarius* (European Goshawk) is very close. The color in this specimen is much darker throughout than is usual in this species."* The general and strong resemblance, however, between the birds of the two continents is admitted by all our authorities on both sides of the question; and Wilson, describing the first specimen seen by him, shot in the vicinity of Philadelphia, observes: "If this be not the celebrated *Goshawk*, formerly so much esteemed in falconry, it is very closely allied to it. I have never myself seen a specimen of that bird in Europe; and the descriptions of their best naturalists vary considerably; but from a careful examination of the figure and account of the Goshawk given by the ingenious Mr. Bewick (Brit. Birds, vol. I., page 65), I have very little doubt that the present will be found to be the same." This statement of Wilson's, considering the advance made in ornithological investigation since his time, is but of little importance, but the same impression has been and still is made on the minds of European collectors by their first sight of the American bird. Coues in his late work on the "Birds of the North-West," in describing the American Goshawk, says:— "My own comparisons have not been sufficiently extensive, but careful examination of the materials at my command shows me decided differences, constant enough to fairly warrant specific discrimination, although I should not be surprised if larger series led to a different result."

SP. CHAR. *Adult.* Head above, neck behind, and stripe from behind the eye, black, generally more or less tinged with ashy; other upper parts dark ashy bluish or slate color, with the

*J. A. Allen in Bulletin Mus. Comp. Zool., Harv. Coll., Cambridge, Mass. (Vol II., p. 321.)

shafts of the feathers black, and frequently with the feathers narrowly edged with black, presenting a squamite or scale-like appearance ; a conspicuous stripe over the eye, and an obscure and partially concealed occipital and nuchal band, white ; entire under parts mottled with a white and light ashy brown ; every feather with a longitudinal line of dark brown on its shaft, and with numerous irregular and imperfect transverse lines or narrow stripes of light ashy brown, more distinct and regular on the abdomen and tibiæ ; quills brown, with bands of a deeper shade of the same color, and of ashy white on their inner webs ; tail same color as other upper parts ; under surface very pale, nearly white, having about four obscure bands of a deeper shade of ashy brown, and narrowly tipped with white ; under tail covert white.

Young. Entire upper parts including head, dark brown, with the feathers, especially on the head and neck behind, edged and spotted with light reddish or nearly white ; tail light ashy, with about five wide and conspicuous bands of ashy brown, and narrowly tipped with ashy white ; quills brown with wide bars of a darker shade of the same color, and wide bands of reddish white on their inner webs ; under parts white, generally tinged with yellowish and frequently with reddish, every feather with a longitudinal stripe, terminating in an ovate spot of brown ; sides and tibiæ frequently with circular and lanceolate spots, and irregular bands of the same color, the latter (tibiæ) generally very conspicuously marked in this manner : under tail coverts white, with a few large lanceolate spots of brown.

Total length—Female : 22 to 24 inches ; wings about 14 ; tail 10½ to 11 inches.
" —Male : about 20 inches ; wing 12½ ; tail 9½ inches.
Bill, bluish-black and white ; iris, cere and feet, yellow.

Genus **ACCIPITER**, Brisson.

Gen. Char. Size rather small; wings short, and tail rather long; tarsi long and slender, with the scales in front frequently nearly obsolete.

This genus contains about twenty species, two of which are found in Canada. They frequent woods and borders of clearings, and prey upon small birds, squirrels, mice and insects.

Accipiter Cooperi, *(Bonaparte)* Gray.

COOPER'S HAWK; "CHICKEN HAWK."

PLATE VIII.

This elegantly-formed Hawk is considered extremely rare in Canada, it being perhaps only represented by about half a dozen specimens altogether in our public and private collections. A circumstance, however, connected with the individual figured on this plate, causes me to suspect that it may be of more common occurrence than is ordinarily supposed; this is explained by the following extract from my note-book for the year 1866—"I have been surprised in my wanderings to observe the general ignorance which everywhere prevails respecting this class of birds (Hawks and Owls). The Eagle is a tolerably well known bird with most of the people we meet, but all Hawks are 'only common Hen Hawks' or 'Pigeon Hawks,' and all Owls 'only common Owls.' But how many a valuable specimen have I rescued from ignominy, and secured for my list and our collections, by seeking out some of these 'onlys' which had been either thrown on the manure heap, or strung up—as was the rare and beautiful Cooper's Hawk obtained by chance to-day—as a *scare-crow*." When Cassin has admitted that Cooper's Hawk is "rather a difficult species to the ornithologists on account of the great variations in its colors, and in size also," and that "it is, in fact, unusual to find two alike in a dozen specimens," we cannot be surprised to find that in Canada, where but few individuals occur, very little should be

known about it. This bird is the *F. Stanleyi* of Audubon, and the *Accipiter Mexicanus* of Richardson in Fauna Boreali Americana. By some ornithologists the *A. Mexicanus* is regarded as a distinct species, but this, as in so many other instances, appears to be merely founded upon a slight difference in size and darker coloring of plumage; both of which diversities are common to the individuals of a great number of species, as we trace these from Canada through the Northern, Middle and into the Southern States. The *A. gundlachi*, Lawr. of Cuba, long considered as specifically distinct from *A. Cooperi*, is now regarded as merely its Southern variety. Although, as I have already stated, perhaps only half a dozen specimens of this Hawk are to be found in collections in Canada, I may add that I have obtained several from collectors in the United States in various stages, for the purpose of comparison. These are now on the table before me, and along side of them I have arranged a series of male and female Sharp-shinned Hawks (*A. fuscus*). The resemblance between the two series of birds is very striking, and in fact the only difference perceptible to the ordinary observer, is that of size and proportion. In other words, Cooper's Hawk is a moderately larger reproduction of the Sharp-shinned Hawk, with longer proportionate tail and stouter legs and feet. As one or two writers have observed, it is just such a difference as we have between the DOWNY WOODPECKER and the HAIRY WOODPECKER. The dorsal plumage of both Cooper's and the Sharp-shinned Hawks is of a dark or medium shade of brown, that of the latter being as a rule the lighter or more ashy. The upper surface of the tail is in both cases distinctly banded or barred with brown—these on *A. Cooperi* being much broader than on *A. fuscus*. On the former the number of these bars is four, and on the latter five. The tails of both are terminated with whitish, and the ends of the feathers are rounded—much more so in the *A. Cooperi* than the *A. fuscus*. The under parts of both of these species vary greatly, but the diversities in the markings are as great among the different individuals of the one species as they are among those of the other. In both *A. Cooperi* and *A. fuscus* the young birds are longitudinally streaked beneath, but these streaks, as the birds

mature, become transverse. It is in some of these intermediate stages of plumage that the two species most resemble one another, so much so indeed in some of the specimens before me that were it not for the invariable difference in size, they could hardly be identified. It is true that the largest females of the *F. fuscus* grade up closely to the small males of the *A. Cooperi*, but there is always an easily perceptible difference in size even in the extreme forms of these. I have further found a good mark of discrimination to be the shape of the tails. In *A. fuscus* the end of the tail is even and the outside feathers are as long, if not a shade longer, than the middle ones; while in *A. Cooperi* the middle ones are considerably larger than those outside. None of my specimens of this last bird are in the adult plumage, and I question very much whether there is one of this plumage among any of our Canadian specimens. This, though apparently strange, is not so, for out of a great number of specimens of *A. fuscus*, procured in many widely separated parts of Canada, I have found only some four or five mature birds. The adult Cooper's Hawk is said by those who have taken it to be not only bluish-gray on the upper parts, but of a decided shade of the same color on the breast and sides. For further particulars respecting the plumages of these two beautiful Hawks, I must refer the reader to the appended descriptions under the present and succeeding articles.

Though rare in Canada, the Cooper's Hawk is resident and tolerably abundant in the United States. The nest is variously constructed. Audubon describes it as composed externally of numerous crooked sticks, lined with grasses and a few feathers. Brewer describes two, both lined with pieces of bark; one of them was between one-and-a-half and two feet broad, the external layer of sticks hardly an inch thick. The interior of this nest was shallow, "with only a slight depression in the centre, hardly enough to keep the eggs from rolling out." I have seen only a few of the eggs of this bird, and these were not obtained in Canada, although it undoubtedly breeds here. To assist in their identification, I give Dr. Coues' reliable and accurate account of them. This writer says—"The eggs I have examined measured

from 1.80 by 1.55 to 2.10 by 1.60—figures showing the variation both in size and shape; they average about 1.90 by 1.50. They resemble those of the Marsh Hawk so closely as to be not certainly distinguishable, but they are usually more globular, and with a more granulated shell. The greatest diameter is at or very near the middle; difference in shape of the two ends is rarely appreciable. All were more uniform in color than those of most Hawks, resembling the pale scarcely marked examples occasionally laid by most kinds of Hawks; none were conspicuously dark-marked. The ground is white, faintly tinted with livid or greenish-gray; if marked, it is with faint, sometimes almost obsolete, blotches of drab, liable to be overlooked without close inspection; only an occasional specimen is found with decided, though still dull and sparse, markings of pale brown. Three or four eggs are the usual nest complement; in the Northern and Middle States they are laid in May." This species is not found in the fur countries, but only in the southern portions of Canada and southward. It is a fierce and courageous bird, preying upon birds much larger than itself, and hares. Audubon relates an instance in which one of these birds grappled with and killed a full-grown cock. It has been occasionally tamed, and Dr. Coues, in his "Birds of the North-West," gives a most interesting and singular account of this, as observed by himself. In Newfoundland Cooper's Hawk is a summer migrant, and is not uncommon. It is rather abundant on the coast of the Atlantic, but it is comparatively rare in the western countries of the United States.

SP. CHAR. *Adult.* Head above brownish black, mixed with white on the occiput, other upper parts dark ashy brown, with the shafts of the feathers brownish black; an obscure rufous collar on the neck behind; throat and under tail coverts white, the former with lines of dark brown—other under parts transversely barred with light rufous white; Quills ashy brown, with darker bands and white irregular markings on their inner webs; tail dark cinereous, tipped with white, and with four wide bands of brownish black.

Young. Head and neck behind yellowish white, tinged with rufous, and with longitudinal stripes and oblong spots of brown; other upper parts light amber brown, with large, partially concealed spots and bars of white; upper tail coverts tipped with white; under parts white with narrow longitudinal stripes of light brown; tail as in adult; bill bluish horn color; tarsi yellow.

Female—Total length: 18 to 20 inches; wing, 10 to 11; tail, 8½ inches.
Male— " " : 16 to 18 inches; wing, 9¼ to 10; tail, 8 inches.

Accipiter Fuscus, *(Gmelin)* Gray.

SHARP-SHINNED HAWK; PIGEON HAWK.

PLATE IX.

This neat little Hawk, in common with the *Falco columbarius*, figured on Plate II., is generally known as the "Pigeon Hawk" both in Canada and the New England States. But as "Pigeon Hawks," "Chicken Hawks," and "Hen Hawks" are the names given by the majority to every species of Hawk which crosses their path, the sooner these terms are done away with the better for our ornithologists. As the propert itle of this Hawk implies, it is a remarkably slender-legged and neat-shanked bird, and in this respect can easily be distinguished from all others. In size it corresponds closely to the *F. columbarius*, but is considerably shorter in the wing, and consequently less adapted for prolonged flight. The total length of the adult male sharp-shin is from 10 to 11 inches, and adult female 12 to 14 inches; the wings measuring respectively from 6 to 6½ inches, and 7½ to 8 inches. As we have already seen, Hawks vary greatly in size, color and arrangement of markings in individuals of the same species, according to their sex and age, and independently of both these. Our last species (*A. Cooperi*), however, and the present one, are particularly marked in this respect, and hence their synonyms are numerous. Wilson described the Sharp-shinned Hawk under the two distinct headings of *Falco velox* and *Falco Pennsylvanicus;* Audubon as *Astur fuscus;* Gmelin as *Falco Dubuius;* Cuvier as *Nisus Pennsylvanicus;* and Swainson and Richardson, in their Fauna Boreali Americana, as *Accipiter Pennsylvanicus.* To all of these authorities I would refer the reader for interesting particulars.

The Sharp-shinned Hawk inhabits the whole of North America, from Mexico to the shores of the Arctic Sea. It is, however, less numerous in the fur countries and high latitudes than in the more temperate parts—as Richardson observes: "It was not seen by any of the members of the expedition in their

several journeys." One specimen, however, was shot at Moose Factory in latitude 51°, and deposited by the Hudson's Bay Company in the Zoological Museum. Canadian specimens of this Hawk often differ considerably in size and color from New England examples, and these again from south-western and western ones; the difference, however, is chiefly one of tint of coloring. There appears to be a rufous western race, as Allen observes, "corresponding with the *Accipiter Mexicanus* form of the *A. Cooperi*; the *Falco nigriceps* form of the *F. peregrinus* (Duck Hawk); the *Archibuteo ferrugineus* form of the *A. lagopus* (Rough-legged Hawk); and the western rufous forms of *Buteo borealis* (Red-tail Hawk); and *Circus hudsonius* (Marsh Hawk)".

The Sharp-shinned Hawk is very closely related to *A. nisus* or Sparrow Hawk of Britain and Europe, but I believe is by the majority of our ornithologists considered as specifically distinct. The distinctive difference, however, is again merely one of tint of coloring, the general plan of the markings being the same in both birds. Cassin remarks concerning the Sharp-shinned Hawk that when in adult plumage it much resembles the *A. nisus* of Europe; "but the young are quite different, as is the case with nearly all the species of this family inhabiting North America, which resemble species of the Old World." Henry Reeks, a British ornithologist, when alluding to specimens of the Sharp-shinned Hawk taken in Newfoundland states that the adult birds of this species were not distinguishable from adult specimens of *A. nisus*, but that he had not had an opportunity of comparing the young birds. The Sharp-shinned Hawk is abundant throughout Canada, and numbers of specimens were obtained on each of our expeditions. These, however, in the majority of instances, were females and young birds, and very few good adult males were procured. A favorite resort of this species is the skirts of forests bordering upon our small interior lakes, or the edges of clearings. In the lumber regions, or the great tracts of pine-timbered lands between the St. Lawrence and Ottawa rivers, and westward of the Great Lakes, this Hawk is but sparingly represented; but in the hard-wood lands on the course of the Mada-

waska and Bonnechere rivers they are very abundant. I have also observed them frequently in the neighborhood of Belleville, and in many localities between this town and the village of Madoc twenty-six miles to the northward, where they are the Hawk most commonly met with. To the northward of the Ottawa river and Ottawa city I collected many along the valleys of the rivers Gatineau and Lièvre, and found them to be particularly numerous around the edges of burnt clearings and where logging was going on. They are tolerably abundant in the neighborhood of Montreal, and a considerable number were obtained some years since on different parts of the mountain. In Hamilton, McIlwraith says: "Seen in spring and fall. Not observed to breed." The prey of the Sharp-shinned Hawk consists of small birds, the smaller quadrupeds, and insects. I have observed this bird sitting motionless for hours during the heat of the day on the branch of some tall tree or the edge of a clearance; towards sundown he rouses up, shakes out his feathers, and is all life and activity in anticipation of his evening repast. The prey is captured, whether it be an insect, mouse or bird, by a sudden and quick dash, and in most cases is carried into some concealed nook amongst the shrubbery, where it is devoured.

The Sharp-shin nests in trees and, according to some writers, on rocks, but I have never observed the nest in this last position. The eggs are four to five in number, of a yellowish or light greenish white color, splashed in every conceivable manner with different shades of brown; sometimes these markings are nearer one end than the other, or form a wreath or belt towards the centre; and again, are confusedly spread over the whole surface from the one end to the other; indeed it is extremely difficult to find two or three exactly alike. The egg measures 1.45 by 1.15, and the ends are of about equal size. If I am not very much mistaken this Hawk occasionally makes use of the nests of other Hawks and Crows to rear its young—a habit common to our little Sparrow Hawk.

Dr. Cooper says: "On the Sierra Nevada I have seen one pursuing a striped squirrel, coming down with a zig-zag course

as if to prevent it from escaping by appearing on all sides of it at once. They frequently take young chickens, and have been seen by Nuttall to drive away a Red-tail Hawk from the vicinity of their nest with all the courage of the king-bird. They occasionally soar upward to a great height, apparently for pleasure, like other Hawks, and though their wings are short, seem to ascend with very little effort, while near the earth their flight is by rapid flappings and short sailings, as if laborious."

Mr. Wm. Couper informs me that this species is commonly met with in the vicinity of Quebec in the autumn, but generally in the young plumage. It is also a common species and nests in Nova Scotia according to Dr. Gilpin.

SP. CHAR. Very similar to *A. Cooperi*, but smaller; head bluish black above, back more brownish; throat and under tail coverts white; other under parts fine light rufous, darkest on the tibiæ, spotted and barred transversely with white, chiefly on abdomen; dark central streaks on breast feathers only; otherwise as in *A. Cooperi*.

Young. Brown—darker than that of *A. Cooperi;* beneath with longitudinal, ovate and circular spots of reddish brown, becoming transverse bands on flanks and tibiæ; under tail coverts white, otherwise as in preceding.

Length, 10.00 to 14.00; extent, 20.00 to 25.00; wing, 6.00 to 6.50; tail, 5.00 to 5.50.

Iris, orange or yellow; bill, bluish horn color, cere and feet, yellow.

Sub-Family BUTEONINÆ. Buzzard Hawks.

Char. General form heavy; size moderate or large; wings rather short and broad; tail moderate. Flight vigorous, but not swift.

Between twenty-five and thirty species are known, five only of which belong to Canada.

Genus **BUTEO,** Cuvier.

Gen. Char. Bill short, wide at base, not very acute; edges of upper mandible with slightly rounded lobes; nostrils large, ovate; wings with fourth and fifth quills usually longest, giving them a rounded form; tail moderate, wide; tarsi moderate, robust, with transverse scales before and behind, small circular and hexagonal scales on sides; toes moderate or short, claws strong.

Owing to the great variations in the plumage of the species constituting this genus, the exact number of species is still undetermined. Four are known to occur in Canada.*

Buteo Borealis, (*Gm.*) Vieill.

RED-TAILED BUZZARD; HEN H. WK.

PLATE X.

This and the succeeding species are alike known as "Hen Hawks" through the country parts of Canada; but although much resembling one another in general habits, nidification, and flight, they are very differently colored birds. The Red-tail, as this bird is often called, is met with over the whole of North America from the Atlantic to the Pacific, and from the borders of the fur

* Few of our birds have caused more confusion among writers or acquired a more involved synonymy than the Hawks of the genus *Buteo*. Setting aside *lineatus* and *Pennsylvanicus* as totally distinct from each other and from the rest; ignoring for a moment 'harlani' and 'cooperi,' we will confine ourselves to consideration of the two species, *borealis*, GM., and *Swainsoni*, BP. These may be immediately distinguished by the emargination of *four* outer primaries in *borealis* and only three in *Swainsoni*. There are other points aside from color which varies so greatly in each.

Borealis (Red-tail) in all its variety of color is much the largest, the female averaging about 24 inches in length, with a stretch of wings over 50 inches; it is robust, with a comparatively short wing, and short, stout legs. In the East it remains comparatively constant in color, aside from the normal changes with age. In the West it runs from a slightly darker or more ferruginous cast into a quite fuliginous condition, the several stages being inseparably connected. The slighter

countries southward to the West Indies. Its variations of plumage are almost innumerable, and consequently its list of synonyms is unusually long.

It is this Hawk that is so often seen by the traveller in Canada describing its great circles in mid-air over our orchards, groves, fields, wood-lands and new clearings, and its loud and somewhat mournful cry—which I cannot describe—is familiar to all. It comes to us early in the spring, towards the middle or latter part of April according to the weather, and may be seen flying about in pairs in search of a nesting place. On one occasion, on the 24th of May, 1864, I watched a pair of Buzzards describing their circles above a piece of woodland bordering on the St. Lawrence, near Lachine. When first observed they were crossing one another's circuits at a comparatively moderate height, or not more than twenty feet above the tops of the trees. Gradually, however, they rose higher and higher, at the same time enlarging their circles, until they must have reached an altitude of a great many hundred feet. At this they remained for a considerable lapse of time, when they again commenced to ascend. Even from this great height their cries could be distinctly heard, but as the birds grew smaller and smaller and finally could barely be recognized save by two minute circling specs, these grew fainter and fainter, and at last ceased to be heard, and at the same instant I lost sight of both birds. This habit of the Red-tail, common also to some of the allied species, I have several times observed and chiefly during the spring of the year. Whether it is for the pur-

departures from the normal Eastern standard are the *montanus* of Cassin, and most later writers, but probably *not* of Nuttall; the climax is reached in *calurus*, Cassin (Red-tailed Black Hawk.) I adopt this name for the extreme Western variety, ignoring the intermediate stages, which have been usually designated *montanus*. In all of these birds, *when adult*, the tail becomes chestnut-red on top, which is never the case with *Swainsoni*.

The *Falco* or *Buteo vulgaris* of Audubon is uncertain—rather, let us say, it comprehends both the Western Red-tail and Swainson's Buzzard, being ostensibly based upon the latter, but the description and figure rather indicating the former. The *Buteo montanus* of Nuttall (1840; not in edition of 1832) is based on Audubon's "*Falco buteo*," but the description is unmistakably that of *Swainsoni*. I follow Mr. Ridgway in relegating both these names to *Swainsoni*, leaving *calurus* as the first distinctive name of the Western Red-tail in all its variety.

Swainsoni is the smaller species, perfectly distinct.—(COUES.)

pose of more completely "scanning a region" or merely a little gambol indulged in during the pairing season it is hard to determine, but I am inclined to set it down to the latter. The same trait in the flight of these birds has been observed and recorded by Dr. W. W. Wood of Massachusetts. He says, "Occasionally several of them will be seen very high in the air, sailing about in circles, sometimes rising in spiral turns, and descending rapidly, uttering a clear shrill cry of *Kae, kae, kae* several times, and often continuing it some minutes. These gyrations occur more commonly in the spring; perhaps it is a nuptial ceremony or a bridal pilgrimage."

The adult Red-tail, as the name implies, has a decided red tail, but only so on its upper surface. It is not, however, until full grown, and some time after, that this color appears. In the fully adult bird the under parts are also fulvous; but this tint does not appear so early as the color on the tail—generally long after. Hence it is not surprising to hear it remarked by some of our hunters that there are different kinds of Red-tails; and our amateur collectors are sorely puzzled. Out of some thirty specimens of this species procured by us on our expeditions in Ontario between the years 1866 and 1876, five only have the decided red-tail, and two the fulvous coloring of the under parts; the remainder exhibit innumerable varieties. A few additional specimens procured in one or other of our markets at Montreal, for the most part during the months of April and May of the last five years, were likewise, with but one exception, immature individuals; this one, however, being the largest and most perfectly colored bird it has been my fortune to procure. It measured when in the flesh upwards of 25 inches in length, and the stretch of its wings was close upon 53 inches. Unfortunately the bill of this specimen was almost entirely destroyed by the shot, and its head otherwise sadly injured. One of the young birds obtained in the market was alive, having been only slightly winged, and was kept so and cared for by a friend of mine for the greater part of a summer. This bird was particularly interesting, from the fact that its irides *were perfectly white*, and not as usual hazel or light brownish. This is

perhaps a very exceptional form; but I have recently been informed by Mr. Passmore, of the Montreal Nat. Hist. Soc., that he also observed the same in a young Red-tail kept alive by him for some time, which he afterwards stuffed and mounted. This specimen Mr. Passmore yet retains in his collection, and as he has faithfully perpetuated the true color of its eyes, the singular spectacle of a *white-eyed* Hawk may be seen by any one who may so desire.

The Red-tail is a rather large and very rotund or robust Hawk, with short stout legs and rather short wings. They vary somewhat in length, some males being only 19 or 20 inches long—from tip of bill to end of tail; while as we have just seen, the female sometimes is upwards of 25 inches in length, with considerable expanse of wing. The specimen figured on the accompanying plate is a fine adult bird of this species. It was shot in the Eastern Townships, and was prepared for the present work by Mr. Wm. Couper, naturalist, of Montreal.

In the western half of the continent the individuals of this species—as is the case with so many of the Hawks—are more rufous and much more intensely colored birds than their eastern congeners, but in all other respects are the same. On this difference was based the species described as *B. montanus* by Cassin and other writers, which was thought to replace, to the westward, the Red-tail *B. borealis*. This error, however, and others regarding this species, are fully explained and done away with in the foot-note appended to this article, from Coues' "Birds of the North-West."

The nest of the Red-tail is generally constructed in a lofty tree and among the top-most branches. It is large, bulky and rather flat, and is constructed of small branches, moss, grass, and generally, though not always, lined with feathers. I cannot speak with certainty of the exact complement of eggs, having found from one to four in different localities; but two is the average number of young hatched. Coues says the eggs are "three in number, about 2.40 long by a little less than 2.00 broad." Their ground

color is a dull whitish, thickly marked in all the specimens I have seen with splashes of brown of various shades. Some, however, are much more marked than others, and I have seen eggs taken by farmers, said to be Red-tails', which were hardly marked at all. The eggs of our next and succeeding species, the Red-shouldered Buzzard, are very similar to those of the Red-tail, and as both species nest in like situations and resemble one other in general appearance and habits, the one is often taken for the other. I think, however, it will almost invariably be found that the eggs of the former are perceptibly smaller than those of the latter.

Mr. Wm. Couper informs me that he met with the nest of this hawk in the month of August in the mountains near the Mingan river, on the north shore of the St. Lawrence. The nest contained two young birds, both of which were captured, and subsequently taken to England by Sir J. Smyth. Mr. Couper further states that the Red-tail is an uncommon bird in the neighborhood of Quebec, and that the specimens which have been taken are mostly in adult plumage. This is singular, because in the vicinity of Montreal, as we have already shown, the immature birds are those most commonly met with.

The Red-tailed Buzzard is a difficult bird to get within gunshot of when approached on foot, and so indeed are most Hawks. It, however, is rather thrown off its guard when approached on horse-back or in a waggon, seeming under these circumstances to have no suspicion; but the instant the horseman or waggon driver stops it is off. I have seen one of these birds remain perched in a tree within an easy stone's-throw of a road along which a long line of lumber-teams were driving with tremendous noise; yet when I cautiously attempted to get within shooting-range of the same bird it at once grew restless, suspicious, and quitted its stand long before I could get near enough for a sure shot. Sometimes I have suddenly come upon this bird in the tall grass of a meadow or clearing, and obtained an easy shot as it rose from the ground. This habit of frequenting and hiding in long grass is often indulged in by the Red-tail, and I

am inclined to believe is done for the purpose of obtaining the young of sparrows, larks, and such other birds as nest on the ground, but this fact I have not yet actually verified; as the bird is said to prey largely upon field mice, snakes and frogs—which are abundant in meadows—the pursuit and capture of these may lead it to frequent such situations. I have never myself observed or heard of an instance of its capturing snakes in Canada, but this fact has been recorded of it by several American writers. One of these is given by Dr. Wood of Massachusetts in the "American Naturalist," in referring to the winter habits of the Red-tail in Massachusetts. This writer says: "A farmer living in this vicinity, while putting up a fence around his pasture, noticed a large Hawk on the ground some forty rods from him, sometimes rising up to two or three feet, then dropping down. Supposing him to be devouring some game he paid but little attention to it at first, but from its continuing in the same place and keeping up the same manœuvring for a long time his curiosity was excited, and coming nearer the bird he discovered that the tail of a large black snake was coiled around the hawk's neck, and that the head and a part of its body was in a hole in the ground; the hawk was nearly exhausted. With a blow of his axe the farmer severed the snake, and brought the hawk to his barn, where he kept him alive for some time. The part of the snake attached to the bird measured three feet, which was probably about one half of its length. The hawk evidently seized the snake when he was partly in his hole and was unable to draw him out, and when found the serpent was endeavoring to convince his would-be-capturer that 'it is a poor rule that don't work both ways.' This was the adult Red-tailed Hawk."

This bird is only a summer visitant in Canada, and is never seen during the winter. At this season, however, it is very adundant throughout the New England States, where it preys on the "wild game of the woods," and occasionally makes raids upon the poultry-yard. Mr. William Brewster of Cambridge, Mass. in an exceedingly interesting article in "Forest and Stream," entitled "Winter habits of Buzzard Hawks," gives some further

particulars respecting the flight and habits of the Red-tail. This writer I observe also mentions its habit of squatting on the long grass. He says: "Sometimes you see one sitting for a long time motionless and erect in the tall grass, watching like a cat, or perhaps walking slowly with side-long motion. At this season (winter) it feeds exclusively on mice and rats; in early spring on toads, frogs, snakes, and the like. I doubt if it ever attacks birds, for in about a dozen specimens examined at different seasons I have never been able to detect any of their remains; nor have I ever seen it pursue one. Occasionally a wounded quail or snipe may fall a prey, but such cases must be rare." This last statement, however, does not hold good for the Red-tail when with us, for I have found in the stomachs of several individuals the remains of sparrows, woodpeckers, grouse, and other birds which I could not determine; as well as the remains of small green frogs. Mr. Brewster also remarks upon the cry of the Red-tail, comparing it to the syllables *cree-e-e! cree-e-ep!* repeated five or six times, and very different he says from the shrill *whe-e-eo!* of the Red-shouldered Hawk, so often mimicked by the Jays.

The Red-tail breeds in a number of localities on the island of Montreal; also on Nun's Island in the St. Lawrence, near that city.

SP. CHAR. *Adult.* Tail bright rufous, narrowly tipped with white, and having a subterminal band of black; entire upper parts dark umber brown, lighter and with fulvous edgings on the head and neck; upper tail coverts yellowish-white, with rufous and brown spots and bands; throat white, with narrow longitudinal stripes of brown; other under parts pale yellowish white with longitudinal lines and spots of reddish brown tinged with fulvous, most numerous on the breast, and forming an irregular band across the abdomen; under tail coverts and tibiæ generally clear yellowish white unspotted, but the latter frequently spotted and transversely barred with light rufous; under surface of tail silvery white.

Young. Tail usually ashy brown, with numerous bands of a darker shade of the same color, narrowly tipped with white; upper tail coverts white with bands of dark brown; other upper parts dark umber brown, many feathers edged with dull white and with partially concealed spots of white; entire under parts white, sides of the breast with large ovate spots of brownish-black, and a wide irregular band on the abdomen composed of spots of the same color; under tail coverts and tibiæ with irregular transverse stripes and sagittate spots of dark brown.

Total length—Female: 22 to 25 inches; wing, 15 to 16 inches; tail, 8½ inches.
" . Male: 19 to 20 " ; wing, 14 " ; tail, 7½ to 8 inches.
Iris brown; bill bluish; cere and feet yellow. Young, bill horn-black; feet greenish.

Buteo Lineatus *(Gm.)* JARD.

RED-SHOULDERED BUZZARD; WINTER FALCON.

PLATES XI & XII.

If it is not the Red-tail the traveller in Canada sees during the spring months circling over our fields and wood-lands, he will not often be mistaken in setting it down as the bird figured on one of the accompanying plates, namely, either the adult Red-shouldered Hawk or its immature form, the Winter Falcon. This is another of those species in which the young differ greatly from the adult birds—the former until comparatively recently being described as specifically distinct by a number of authors under the name *Falco hyemalis*. This last form, or in other words, the immature bird is that most frequently met with throughout Canada in the summer months, but during April and May I have collected a great number of fine adult birds of both sexes. The Red-shouldered Hawk is undoubtedly one of our commonest species in one or other of its stages, and it is equally so throughout the Atlantic States. In its habits, manner of flight, and general appearance it much resembles the Red-tail, but is a slightly smaller bird—the male generally being from 18 to 20 inches, and the female 21 to 23 inches in length. Perhaps it is to this species that the appellation of Hen Hawk is most commonly given in Canada. The latitudinal range of the Red-shouldered Hawk appears to be more restricted than that of any other species in the family. There is no authentic account of its occurrence in high latitudes, nor yet in any portion of the fur countries. It reaches, however, across the continent, being found on the Pacific slopes, where, as might be expected, its tint of coloring is brighter and more ferruginous. This western plumage was for some time, indeed until very recently, considered to characterize a bird specifically distinct from the Red-shouldered Hawk of eastern North America, and was described by Cassin as *Buteo elegans*. It is, however, simply another example of the invariably assumed rufous

or ferruginous plumage of western individuals of our eastern species, as illustrated also by the western representatives of the *B. borealis* (Red-tail), *Archibuteo lagopus* (Rough-leg) *Accipiter fuscus* (Sharp-shin), *Circus cyaneus* (Marsh Hawk), *Falco communis* or *peregrinus* (Duck Hawk), and other species of this family, all of which are ordinarily more rufous than the eastern, though only some of these have as yet been separated as distinct species. The so-named *B. elegans*, however, is not confined to the Pacific slopes, as dark ferruginous plumaged birds have been occasionally met with as far to the eastward as the neighborhood of Hamilton, Ontario. One such was shot some years since at Baptiste Creek, and is now in the collection of Mr. McIlwraith of the city just named. This specimen only differs from our ordinary form of Red-shouldered Hawk in more intense coloring, and to give such a distinct specific name would, it seems to me, be ridiculous.*

In East Florida, according to Allen, the Red-shouldered Hawk is very abundant, and by far the most numerous species of the family; "it is generally smaller and much brighter-colored than New England specimens. The dark line along the shaft of the feathers below, especially on the throat and breast, is very distinct—in this respect, and in the bright colors, greatly resembling the so-called *Buteo elegans* of Cassin."

This species nests in nearly every section of Canada. It usually chooses a lofty tree, and builds a large and shallow nest in the uppermost branches. This is constructed of branches, grass, leaves and moss, and is similar in every respect to that of the Red-tail. The eggs are generally four in number, but it is not unusual to find but three. They are of a dull-whitish color, marked irregularly with splashes of brown, and are slightly smaller than those of the Red-tail, measuring 2 inches or a little more in length by about 1¾ inches in breadth.

* Since writing the above I have been so fortunate as to procure from the neighborhood of the Back River, on the Island of Montreal, a remarkably ferruginous colored Hawk of this species. It is an adult female, and differs very much in tint from any specimens I have ever taken. Indeed I should not have recognized the bird save for the marked and characteristic *red shoulders*. This specimen clearly denotes a passage towards the *B. elegans* of the west, which I am now more convinced than ever is the same species.

Some pairs of these Hawks or Buzzards nest regularly at St. Rose, to the northward of the city of Montreal, and Mr. Couper informs me that their eggs have been several times taken by Mr. Dunlop.

The birds figured on the accompanying plates have been carefully selected from among a great number of specimens, and are truthful representations of the two forms most generally met with. The Winter Falcon (the young) on Plate XII. is one of the most perfectly mounted specimens I have ever met with, and being in spring plumage, forms a picture that for accuracy and beauty has never been equalled in any work on ornithology. The adult bird on Plate XI. is far from being the best of the individuals I have had to select from, but as it is in the plumage most commonly met with, it will serve better the object of the present work than would any of the other—perhaps more beautiful, but certainly less frequently met with forms of plumage. Were I to attempt to illustrate the various stages passed through by this Hawk from the *young-of-the-year* to its true adult form, twelve plates would not be sufficient.

The number of individuals of this species taken on our various expeditions amounts in all to forty-three; the majority of these being immature birds.

SP. CHAR. *Adult.* Wing coverts from its flexure to the body, fine bright rufous; breast and other lower parts of the body paler orange rufous, many feathers with transverse bars and spots of white, which predominate on the abdomen and under tail coverts; entire upper parts brown; on the head mixed with rufous, and with white spots on the wing coverts and shorter quills and rump; quills brownish-black, with white spots on their outer webs; tail brownish black, with about five transverse bands of white and tipped with white.

Young. (*Winter Falcon*). Entire under parts yellowish white, with longitudinal stripes and oblong spots of dark brown; throat dark brown (this is variable); upper parts lighter ashy brown, with many partially concealed spots and bars of white; quills dark brown, with wide transverse bars of rufous and white on both webs; tail ashy brown, with numerous bars of pale brownish and rufous white; tail beneath silvery white.

Total length—Female: 21 to 23 inches; wing, 14 inches; tail, 9 inches.
" Male: 18 to 20 inches; wing, 12 inches; tail, 8 inches.

Iris brown; bill horn-blue; cere and feet yellow.

Buteo Swainsoni, Bonaparte.

BUTEO INSIGNATUS, Cassin.

SWAINSON'S BUZZARD; CANADA BUZZARD.

NO PLATE.

This species appears to inhabit chiefly the western portions of America, and is particularly abundant in the Missouri region, but it has been taken several times in Canada, once, according to Coues, in Massachusetts and was observed by the expeditions with which Sir John Richardson was connected "as far north as the fifty-seventh parallel of latitude, and it most probably has a still higher range." Dr. Bernard J. Gilpin of Halifax informs me that it is common in that Province, but generally confounded—as it has been nearly everywhere—with the Red-tail (*B. borealis*), which very closely resembles it. Unfortunately I was not able to secure a specimen for the present work. There should have been one at my disposal in the Museum of the Nat. Hist. Soc. of Montreal, for on turning up Cassin's figure and description of his *B. insignatus*—this same bird in a melanctic condition—I read as follows:—"Of this very remarkable little Buzzard one specimen only has come under our notice, and is that above described. It belongs to the collection of the Nat. Hist. Soc. of Montreal, by whom it was most kindly sent to Philadelphia for examination at my request, through the good offices of M. M'Culloch, M.D., a distinguished physician and naturalist of that city. . . . It was captured in the vicinity of Montreal." Considering myself sure of this specimen I did not think it necessary until recently to make further inquiries concerning it. On visiting the museum, however, to get the bird I was greatly surprised and disappointed to find that it had vanished; neither the present curator nor taxidermist knew anything about it, and the former gentleman positively asserts that no such specimen has been in the collection during his term of office—about thirteen years. Previous to this term, however, I had myself several times seen this bird, and had

more than once examined it in the presence of Mr. Wm. Hunter, late taxidermist to the same Society. Where is this valuable specimen at present? Mr. Cassin clearly states that it was sent to Philadelphia for examination and description, but does not say what afterwards became of it, nor can I find any record either of its loan or of its return in the printed proceedings of the Nat. Hist. Society. This is a matter that should be looked into, and that without delay by this Society, as if one rare specimen has thus been permitted to be lost, there is no saying how many others may have from time to time in like manner been removed. I allude to this more particularly here, as there is little doubt but that these pages will fall into the hands of nearly all of our American ornithologists, some of whom may yet be able to throw some light upon the fate of—perhaps return—this stray specimen.

Swainson's Buzzard has been already figured and described under several names. Richardson in his Fauna Boreali Americana gives it as the *Buteo vulgaris* or Common Buzzard; Cassin as already mentioned describes its melanotic condition as a new species under the name of *B. insignatus*, Brown Hawk or Canada Buzzard; while Hoy's *B. Bairdii* is now well known to be the young bird. It is undoubtedly a rare bird in Canada in any of its forms, and little is known of its distribution or nidification in our Provinces. Mr. McIlwraith of Hamilton says: "A specimen of this rare bird was shot in 1860, while in the act of pouncing upon a tame pigeon in the streets of Oshawa. This is the only instance I have heard of its occurrence in Canada." Our Hawks, however, have been but little investigated, and it is not improbable that not only this but some other species, now considered as accidental or rare, will yet be found to frequent regularly certain sections of the country. For my own part I have never had much faith in the validity of the *B. Swainsoni* as a distinct species, and have always considered Cassin's *B. insignatus* as a purely fortuitous condition of the *B. borealis* or Red-tailed Buzzard, having seen very similar conditions of plumage in a number of specimens of the *B lineatus* or Red-shouldered Buzzard. But since studying Dr. Coues' article on Swainson's Buzzard, and observing that he had the opportunity

of examining "about forty specimens," I confess to being inclined now to agree with him in his decision. He says, "The species is thoroughly distinct from its nearest ally, *B. borealis;* it never gains the red tail, so characteristic of the latter, and differs in many other points of coloration in its several stages of plumage, as noted beyond. Although its linear dimensions intergrade with those of the Red-tail, it is neither so heavy nor so large a bird, and its shape differs in some points. A very tangible and convenient distinction to which my attention was first called by Mr. Ridgway, and which I have verified in numerous instances, is found in the emargination of the primaries. . . . Swainson's Buzzard has only *three* emarginate primaries, while the Red-tail has *four;* the fourth quill of the former, like the fifth of the latter, is variously sinuate-tapering, but never shows the decided nick or emargination of the inner web."

The dimensions of the adult Swainson's Buzzard are 19.00 to 20.00 long by 49.00 in spread of wing, the latter about 15.00. Coues says that in both sexes and at all ages, the eye is of varying shade of brown, and never yellow; and that in the adult birds the cere, gape, base of under mandible and feet, "are rich chrome-yellow;" the rest of the bill and the claws being bluish-black.

As this is an exceedingly interesting species, and other specimens of it in one or other of its forms will undoubtedly yet be taken in Canada, I append full descriptions of it in its adult and immature stages. The first of these is Cassin's, and is taken from the bird which was—and ought now to be—in the Montreal Museum of Nat. Hist. The second is by Coues, and is very thorough.

(*a*)

Var. INSIGNATUS.

SP. CHAR. *Adult Male.* Under coverts of the wings and tail white—the former striped longitudinally with pale rufous, and the latter transversely with reddish brown; edges of wing at the shoulder nearly pure white; tibiæ rufous irregularly barred with brown; throat and a few feathers of the forehead white, each feather having a line of dark brown, or nearly black.

Entire other plumage above and below dark brown, every feather having a darker, or nearly black, central line; quills above brown, with a slight purple lustre; beneath pale cinereous, with their shafts white, and with irregular transverse bands of white; tail above dark brown, with an ashy or hoary tinge, and having about ten transverse bands of a darker shade of the same color; beneath nearly white, with conspicuous transverse bands of brown, the widest of which is subterminal; tip paler, or nearly white; bill dark; cere, tarsi, and toes yellow.

Female. Nearly Adult. Like the preceding, but with the upper plumage darker, and the entire under parts dark rufous chestnut; darker on the breast, quite uniform on the flanks and abdomen, and every feather having the shaft darker brown, nearly black; throat, forehead, under wing coverts and under tail coverts white; tail as in the preceding.—CASSIN.

(*b*)

BUTEO SWAINSONI.

SP. CHAR. *Young-of-the-year* (Both sexes). Entire upper parts dark brown, everywhere varied with tawny edgings of the individual feathers. The younger the bird the more marked is the variegation; it corresponds in tints closely with the color of the under parts, being palest in very young examples. Under parts, including lining of wings, nearly uniform fawn-color (pale, dull yellowish-brown), thickly and sharply marked with blackish-brown. These large dark spots, for the most part circular or guttiform, crowd across the fore-breast, scatter on the middle belly, enlarge to cross-bars on the flanks, become broad arrow-heads on the lower belly and tibiæ, and are wanting on the throat, which is only marked with a sharp, narrow, blackish pencilling along the median line. Quills brownish-black, the outer webs with an ashy shade, the inner webs toward the base grayish, paler, and marbled with white, and also showing obscure dark cross-bars; their shafts black on top, nearly white underneath. Tail feathers like the quills, but more decidedly shaded with ashy or slate-gray, and tipped with whitish; their numerous dark cross-bars show more plainly than those of the quills, but are not so evident as they are in the old birds.

Adults (either sex). Upper parts dark brown, very variable in shade, according to season or wear of feathers, varied with paler brown, or even reddish-brown edgings of the feathers, but without the clear fawn-color of the young; the feathers of the crown showing whitish when disturbed, and usually sharp, dark shaft-lines; the upper tail coverts chestnut and white, with blackish bars. Quills and tail feathers as before, but the inner webs of the former showing more decided dark cross-bars upon a lighter marbled-whitish ground, and the latter having broader and sharper dark wavy bars. These large quills, and particularly those of the tail, vary much in shade according to wear, the new feathers being strongly slate-colored, the old ones plain dark brown. The tail, however, never shows any trace of the rich chestnut that obtains in the adult *B. borealis*.

Male. Under parts showing a broad pectoral area of the bright chestnut, usually with a glaucous cast, and displaying sharp, black shaft-lines; this area contrasting sharply with the pure white throat. Other under parts white, more or less tinged and varied, in different specimens, with light chestnut. In some males this chestnut is diminished to traces, chiefly in flank-bars and arrow-heads, and the white throat is immaculate; in others the throat shows blackish pencilling, and the rest of the under parts are so much marked with the chestnut, chiefly in cross-bars, that this color predominates over the white, and appears in direct continuation of the pectoral area itself. Some feathers of this area are commonly dark brown.

Female. Much darker underneath than the male; throat pure white, but other under parts probably never whitening decidedly. Pectoral area form rich, dark chestnut or mahogany-color, mixed with still darker feathers, to brownish-black; and other under parts heavily marked with chestnut, chiefly in cross-bars alternating with whitish, but on the flanks, and sometimes across the belly, these markings quite blackish. The general tone of the under parts may be quite as dark as the pectoral area of the male, but it lacks uniformity, and the increased depth of color of the pectoral area in this sex suffices to preserve the strong contrast already mentioned (About forty specimens examined.)—COUES.

Buteo Pennsylvanicus *(Wilson)* Bonap.

BROAD-WINGED BUZZARD.

PLATE XIII.

Contrary to the general rule among our Birds of Prey—most of which range across the continent—the longitudinal dispersion of the present species is quite restricted. It inhabits the temperate parts of eastern North America, and the only instance of its occurrence in the Missouri region is recorded by Prof. Snow, who observed it in Kansas. It appears to be particularly numerous along the Atlantic coast, and in New England, where it is one of the most abundant species of the family. Further westward it is met with chiefly in the fall and winter. It has been observed about Washington, D.C., is given as common in Florida, is known to reach as far south at least as Ecuador, and to reside in Cuba. Audubon, however, gives it as rare south of the middle States, and Dr. Coues does not mention it in his list of the birds of South Carolina.

In Canada it is not a common species. I have only met a few individuals, most of these in immature plumage; but the bird is tolerably well represented in most of our collections. Mr. McIlwraith of Hamilton says: "I have noted extensive migrations of this Hawk in March of different years—as many as twenty or thirty being in view at one time; they passed along at a considerable height, moving in circles toward the North-West. Those met with in the woods appeared to be stragglers from the main body." It has been taken about London, Ont., and according to Mr. Passmore a considerable number in the vicinity of Toronto of both young and adult birds. It occurs also in the neighborhood of Montreal, frequenting the low grounds, and Mr. Wm. Couper, naturalist and taxidermist, informs me that the young of this species occurs commonly in the neighborhood of Quebec in the autumn, where they frequent the swamps to the northward of that city. Mr. Couper also states that the adult birds are only seen

occasionally, and that he has never met with a nest. I have not myself met with either the nest or eggs of this Broad-winged Hawk, and Dr. Coues remarks in his "Birds of the North-West," "The nest of this species has but seldom fallen under the notice of naturalists." Audubon saw and described one. Prof. Adams took one, which is now in the museum of Middlebury College, Vermont. Another was seen and examined by Mr. Samuels in West Roxbury, Massachusetts, in May, 1864. These, so far as I can learn, are the only records in existence in North America. Mr. Samuels states that the one examined by him was built in the fork of a tall pine-tree, near the top, and was constructed of sticks and twigs, lined with red cedar-bark, leaves, and feathers. It contained four eggs, measuring from 2.00 to 2 15 inches in length, by 1.70 to 1.72 in breadth. These were a "dirty yellowish-white, covered more or less thickly in the different specimens with spots and blotches of reddish-brown." The bird undoubtedly breeds in Canada, and I take this opportunity of directing the special attention of our collectors to it. In mature plumag eit is an extremely handsome little Buzzard, and quite different in its colors from any other American species.

Sp. Char. Smaller than any of the preceding. *Adult.*—Entire upper parts umber brown, feathers on the occiput and back of the neck white at their bases. Throat white, with longitudinal lines of brown, and with a patch of brown on each side running from the base of the lower mandible; breast with a wide band composed of large cordate and sagittate spots, and transvere bands of reddish ferruginous tinged with ashy; other under parts white, with numerous sagittate spots of reddish on the flanks, abdomen, and tibiæ. In some specimens the ferruginous color predominates on all the under parts, except the under tail coverts, and all the feathers have large circular or ovate spots of white on both edges, under tail coverts white. Quills brownish-black, widely bordered with white on their inner webs; tail dark brown. narrowly tipped with white, and with one wide band of white and several narrow bands near the base.

Young. Upper parts dull umber brown, many feathers edged with fulvous and ashy white; upper tail coverts spotted with white; under parts white, generally tinged with yellowish, and having longitudinal stripes and oblong and lanceolate spots of brownish-black; a stripe of dark brown on each side of the neck from the base of the under mandible. Tail brown, with several bands of a darker shade of the same color, and of white on the inner webs and narrowly tipped with white.

Total length—Female: 17 to 18 inches; wing, 11; tail, 6½ to 7 inches.
" Male: 16 to 16½ " " 10; " 6 to 6½ "

Archibuteo Lagopus var. Sancti-Johannis *(Gm.)* Ridg.

ROUGH-LEGGED BUZZARD; BLACK HAWK.

PLATES XIV & XV.

"The question, long agitated, of the relationship of our 'Black' and 'Rough-legged' Hawks may be considered settled in favor of their specific identity, the Black Hawk being simply the melanotic condition of the Rough-legged. There is nothing either peculiar or remarkable in this, melanism being an affection common to many or most Hawks, independent of age, sex, season, or locality, and analogous to the rusty-red plumage of Owls."

This quotation from a recent work of Dr. Coues will suffice, in introducing the Plates of this much talked-and-written-of Buzzard, in two of its stages of plumage. These two, as may be seen at a glance, are very different, and it is no wonder that they have until quite recently been regarded as belonging to closely allied specifically distinct birds. Now, however, (1876) our leading ornithologists seem agreed on this vexed question. Baird and Ridgway, after long and patient research, end the controversy by stating—"The Rough-legged Hawk of North America and the Black Hawk *are the same species*, A. SANCTI-JOHANNIS. This species or race, however, is not the same as that of Europe. (See Hist. N. Am. Birds, III., pp. 304–306.)"* I am of the opinion, however, that the Black Hawk is the adult bird. The typical *lagopus* belongs to Europe; the variety *sancti-johannis* to northerly North America; while the melanotic or dark condition or stage is chiefly observed in the middle Atlantic States, New England, and some parts of Canada.

The Rough-legged Buzzard in one or other of its forms, is frequently met with in Canada, and in our various expeditions we have collected upwards of thirty specimens. These vary greatly, and were I to write a monograph of this species, fifteen Plates

* Letters from Baird to author, dated March 11th, 1876.

would be required in order to properly illustrate these thirty specimens. According to Richardson this Buzzard arrives in the fur countries in April or May and leaves in October. I have generally observed it in the central portions of Canada about the latter part of April and beginning of May, and have seen but few individuals later than October. It frequents the same low watery localities as is chosen by the Marsh Hawk or Harrier, and both birds are often seen hunting together in the same fields. It preys largely upon field-mice, frogs, snakes and lizards, and seldom upon birds. It is a sluggish and inactive bird during the day, but towards sundown and during the twilight is rather energetic in the search for its evening repast. In this respect as well as in its general mode of flight and capture of its prey, it much resembles the Marsh Hawk. Indeed I have seen both these birds actively engaged in hunting long after dark, and fully agree with Audubon in considering the Rough-leg the most nocturnal of our FALCONIDÆ. These Buzzards are often shot by the duck hunters, and brought into market for sale, and this spring (April, 1876) I obtained five specimens from this source. One of these was in the dark brownish plumage, and was a very large individual, the others showed indications of a passage to this stage. I have not met with its nest, and, from the fact of the individuals being more numerous with us towards the latter part of September and October, conjecture they nest mainly in the fur countries and possibly in high latitudes. From their habits we not unnaturally might expect to find them breeding in the same positions as the Marsh Hawk, but this I have never observed, nor have I heard of their eggs being taken in Canada. The nest is said to be ordinarily built of sticks, etc., in a high tree; but Dr. Brewer has met with it on cliffs. The eggs are three or four in number, and measure about 2⅓ by 1¾ inches. In color they vary from a dull whitish, scarcely marked, to drab or creamy, "largely blotched with different shades of brown, sometimes mixed with purple slate markings."

A number of dark individuals have been taken in several parts of Canada, and the beautiful portrait given on the second

of the accompanying Plates, was taken from a particularly dark bird shot near Montreal. These Black Hawks are mentioned in all of our local lists as "rare." In Europe this melanism has not been observed.

Mr. Reeks kept a bird of this species, taken in Newfoundland alive, for two months, and fed it almost entirely on trout (*salmo fontinalis*), to which it seemed particularly partial. This same bird, however, "invariably refused smelts, either dead or alive, and fresh from the water." The Rough-leg is a summer migrant to Newfoundland, but, Mr. Reeks says, "as a rule remains later in the fall than most of the Falconidæ." It occurs likewise in New Brunswick and Nova Scotia, and in Labrador. In the McKenzie River district Ross mentions the Rough-legged Hawk as common as far north as Lapierre's House, and the Black Hawk as rare northward to Salt River. They are said to breed in great numbers to the northward of Great Slave Lake.

*** Since writing the foregoing, and while this was in press, I have received an additional lot of specimens of the Rough-legged Buzzard. These were all taken in the Province of Quebec. They show every stage of plumage from the *young-of-the-year* to apparently the fully adult bird—which is of a uniform *dark brown color*. Three of them have a great deal of hoary-white on the crown and hind head, and these are further remarkable for very broad, black, abdominal belts, and almost unspotted breasts. There are five specimens labelled "Black Hawks," and these from the appearance of their bills, feet, claws and wear of feathers, are evidently birds of many summers. I have now examined twenty-nine skins of this species, and am fully convinced that the *dark stage* is the true adult bird, and not merely "a melanotic condition." I am also informed that this stage is met with yearly and during every month of the summer in the low lands and boggy tracts around Lake St. Peter, Sorel, and Three Rivers; in the neighborhood of the Bay of Quinté, Belleville, Ontario; and in the marshes bordering on the Cataraqui river near Kingston. Consequently it is only natural to suppose that the bird nests in

all these sections. I believe it will yet be discovered that its nest is built on the ground or in some low bush.

The genus *Archibuteo*, of which this species is the only representative in Canada, is distinguished by tarsi densely feathered to the toes, but more or less naked and scaly behind; wings long and wide; toes short, claws moderate. Individuals larger than in *Buteo*.

Sp. Char. *Ordinary Form.* Head above yellowish-white, with reddish-brown stripes; back, scapulars, and shorter quills, pale ashy, with partly concealed transverse bands of white and dark brown, the latter frequently prevailing on back; rump dark umber brown; primaries edged with ashy; a large space on their inner webs at base white; under parts white; throat with dark brown stripes; breast with larger spots and concealed reddish-brown stripes; abdomen with numerous narrow bars of brownish-black, most conspicuous on flanks, and tinged with ashy; tibiæ barred transversely with white and dark brown tinged with reddish; under tail coverts white; upper tail coverts white at base, tipped with brownish-black; tail white at base, with a wide subterminal band of black, and about two other black bands alternating with light cinereous; under wing coverts white, with brownish-black spots, and a long patch of ashy-brown on the longer ones.

Younger. Light umber-brown above, much edged with yellowish and reddish white; a wide band on abdomen brownish-black; other under parts yellowish-white, with a few lines and spots of brownish-black; quills ashy-brown, a large portion of their inner webs white at base, with a subterminal band of light umber-brown, tip white; tibiæ and tarsi pale reddish-yellow, with stripes and spots of dark-brown.

Iris pale-brown; bill slate-color; cere and feet yellow.

Dark Stage.

(*Probably true Adult.*)

Entire plumage brownish-black (rarely glossy-black); forehead, throat, and large partly concealed spot on occiput, white; tail with one transverse band of white, and irregular markings of the same towards the base; quills with their inner webs white, conspicuous from below; head sometimes more or less striped with yellowish-white and reddish-yellow, and tail sometimes with several transverse bands of white more or less irregular. Bill blackish; iris, cere, and feet yellow.

Length in all stages: 19.00 to 20.00; extent, 50.00 to 53.00; wing, 15.00 to 17.00; tail, 8.00 to 9.00.

Sub-Family MILVINÆ, The Kites.

Char. Size usually moderate or small; general form rather slender and not strong; wings and tail long; bill short, weak, hooked and acute; tarsi and toes slender and weak. Food chiefly reptiles and insects.

This sub-family comprises those birds commonly known as Kites and Harriers. It is represented in Canada by one genus and a single species.

Genus **CIRCUS**, Lacepede.

Gen Char. Face partly encircled by a ruff of short projecting feathers, as in the Owls; head rather large; bill short, compressed, curved from the base; nostrils large; wings long, pointed; tail long; tarsi long and slender; toes moderate; claws rather weak.

Circus Cyaneus var. Hudsonius *(Linnè.)* Schl.

MARSH HAWK; HARRIER; BLUE HAWK.

PLATE XVI.

This commonly met with Hawk frequents our meadows and lowlands, and more particularly such as are in the vicinity of rivers. Its partiality for moist, boggy places has earned for it in some quarters the expressive but not very elegant name of "Bog-trotter," while the adult male bird, being exceedingly unlike the female and young birds, is pretty universally known as the "Blue Hawk." It is also ordinarily known as the "Brown Hawk," this color of plumage being by far the most common; indeed there are few collections in Canada which can boast of a specimen in the light bluish plumage. Observing the scarcity of the Blue Hawk, I long ago revolved in my mind—as many others have done—the question whether this was not in reality a distinct, though undoubtedly closely allied, species; but from the very few specimens I could find, I was unable to come to any satisfactory conclusion. Mr. Passmore, who had collected for years in the

neighborhood of Toronto, informed me that he had never seen a single individual in the blue plumage. The late Mr. Wm. Hunter, who had collected both around Hamilton and Montreal, had only taken one or two specimens. Mr. McIlwraith, also of Hamilton, by letter informs me that the Blue Hawks are extremely rare, perhaps occurring as one in fifty. Mr. Wm. Couper, naturalist, formerly of Quebec now of Montreal, records the same. In my own expeditions between Montreal and the western extremity of Lake Superior I have only twice observed it, and have never been able to secure a specimen. On the other hand a gentleman has recently informed me that bluish Marsh Hawks are abundant to the rear of the island of Montreal, in the vicinity of Riviere des Prairies; and Dr. Bernard Gilpin of Halifax, N. S. states that the Marsh Hawk in all its stages between young and blue adult is common in that Province.

The same scarcity, however, of blue Marsh Hawks has been recorded by observers throughout the United States. One writer in the American Naturalist cries out, "Where are the pale-blue gray male birds? We have yet to see the first specimen this year. We have never seen a dozen in so many years. Is this absence of male Harriers as noticeable elsewhere? Have others called attention to it? This species (*C. hudsonius*) nidificates in this State (Mass.), yet even in the neighborhood of the nests we have been unable to find the male bird." So far as I can ascertain all the individuals yet obtained in the blue plumage have been males, and should we be disposed to consider these as specifically distinct from our common brown Marsh Hawk, we have next to inquire—What of the females? Are they likewise blue; or do they resemble the females of the common species? The whole question is yet very perplexing, but is not without a parallel in ornithological history. For instance we have already recorded the dark or black variety of the Rough-legged Buzzard *(B. lagopus)*, which up to as recently—we may say as yesterday was believed to be a valid species; while in the *Strigidæ* or Owl family we have yet to notice red stages of the Screech Owl *(Scops asio)* and Acadian Owl *(Nyctale acadica)*.

To say that the Blue Hawk is the true adult male Marsh Hawk may or may not be correct; but I am rather inclined to give it as a plumage occasionally assumed by the old male bird. To state positively, however, that all others are young and immature birds is simply absurd, for I have examined a number of specimens of evidently fully mature male individuals which did not show the slightest indication of the bluish garb. Writers have been too fond of setting down peculiar and often local conditions of plumage as that of adult or very old individuals of a particular species, *e. g.* the white and unspotted stage of the Snow Owl, which I know to be occasionally assumed as well by the young birds; and again the red stage of the Screech Owl as above referred to —which appears to be independent of either age or sex. But we cannot enlarge. For the present, therefore, we may simply state that in Canada the Marsh Hawk is, with few exceptions, of umber-brown or light rufous colors, and that occasionally the males assume a lighter and lead-gray hue. It is also sufficient to state here that our American bird is a geographical variety of the European; and further that in America there appears to be a northern and southern variety, namely *hudsonius* and *cinereus*. The species, however, may correctly be described as diffused over the whole of North America from Mexico to the Arctic regions. It is equally abundant on the coasts of the Pacific as on those of the Atlantic, but as in many of the other species of the family, the western specimens, and especially the young of these, are much brighter-colored than the eastern examples. In Europe and Asia the individuals of this species also vary greatly in plumage; and Mr. G. R. Gray in his "Catalogue of British Birds" cites no fewer than twenty synonyms.

The Marsh Hawk or Harrier is among the "ignoble" birds of the falconers, but, as Mr. Coues remarks, "is neither a weakling nor a coward, as one may easily satisfy himself by handling a winged bird." Though long-winged, its flight is not rapid, but is accomplished by alternate measured flappings and low sailings, turning and "quartering" the ground, something in the manner of a

well-trained dog. From this habit has sprung the term "harrier." The bird was a few years ago very abundant in the low meadows which border on the Lachine railroad on the island of Montreal, and in the neighborhood of the wheel-house and St. Pierre river or creek. I have also frequently met with it on the Nuns' island in the St. Lawrence, opposite Montreal, where several pairs nested regularly for many years. Its usual prey consists of field mice and field-crickets largely, as also frogs and snakes. In this respect, as well as others, it resembles the Rough-legged Buzzard (*B. lagopus.*) I have never observed it prey upon birds of any description, although it may possibly do so when the former are scarce. Audubon says that occasionally when impelled by hunger it will attack patridges, plovers, and even ducks; but such occasions must be rare. I have examined several whose stomachs were filled with the fragments of frogs and crickets alone. The Marsh Hawk hunts largely during twilight and even after dark, and during the heat of the day is but seldom met with. Its nest has been variously described by writers as being constructed of moss, grass, feathers and hair, and placed on the ground or in a low bush. In Canada, however, such a record would not be correct nor sufficiently definite. I met with two nests on the Nuns' island, near Montreal, both of which contained eggs. One of these was simply a collection of dried marsh grass, leaves, and a little moss, deposited on the ground, but close to the roots of a small bush, the branches of which protected and to a great extent concealed it. In this there were four eggs of a pale greenish or bluish-white color, without any definite markings, although I observed something like obscure markings on two of them. These measured a little less than 1¾ inches in length, and in the broadest part were a little over 1 inch. The other nest was close to the base of a tall clump of weeds and grass, and was entirely constructed of dried grass, loosely gathered together. This was much trodden down, and looked as if it had been used for a number of years. I believe these nests are in many instances returned to regularly year after year by the same pair of birds, each time being slightly added to and repaired. This last nest

contained three eggs, of similar color and proportions to those first mentioned; the bluish shade, however, was perhaps more perceptible in the eggs of the second nest. I have never observed or heard of a nest being placed in a bush off the ground in Canada, but Richardson says in his Fauna Boreali Americana, "The natives informed us that these birds build indifferently on the ground or in the low-bushes." My experience, however, of the tales told by natives is anything but satisfactory; and I know that in many instances such informants delight to color their stories with something unusual, and to say the least, unlikely. It is also astonishing what additional information may be gained by exhibiting a plug of tobacco or a flask of spirits; but information so incited is worse than worthless.

The usual complement of eggs in the nest of the Marsh Hawk is from three to five, but more have occasionally been found; three is the average number of young hatched. When a nest has been robbed the bird lays again once or twice, but if further molested abandons it. Coues gives as the measurement of a number of eggs the following—"1.87 by 1.45, 1.86 by 1.45; 1.82 by 1.44; 1.80 by 1.45; 1.80 by 1.42; they were dull and white, with the faintest possible greenish shade; there were no evident spots, but much mechanical soiling."

The Marsh Hawk reaches the fur countries towards the latter end of April and leaves before the end of September. It winters in the middle and eastern States.

They are particularly abundant during the month of April in the low lands around Lake St. Peter and in the vicinity of Sorel, where they are often shot by duck hunters and brought into our markets. The Rough-legged Buzzard frequents the same situations, and both birds are seen hunting together.

SP. CHAR. *Adult.* Entire upper parts, head and breast, pale bluish-cinereous, on the back of head mixed with dark fulvous; upper tail coverts white; beneath white, with small cordate or hastate spots of light ferruginous; quills brownish-black; their outer webs tinged with ashy, and a large portion of their inner webs white; tail light cinereous, nearly white on the inner webs of the feathers, and with obscure transverse bands of brown; its under surface silky-white; under wing coverts white.

Younger. Entire upper parts dull umber-brown, many feathers edged with dull rufous, especially on the neck; beneath dull reddish-white, with longitudinal brown stripes, most numerous on front of throat and neck; tibiæ tinged with reddish; upper tail coverts white.

Young. Entire upper parts dull umber-brown, except white tail coverts; beneath rufous with stripes of brown on breast and sides; tail reddish-brown, with about three wide bands of dark fulvous, paler on the inner webs.

Length, 16.00 to 21.00; extent, 37.00 to 45.00; wing, 13.50 to 15.50; tail, 9.00 to 10.00.
Bill slate-blue; iris, cere, and feet, yellow.

Sub-Family AQUILINÆ, The Eagles.

Char. Size large, and all parts very strongly organized. Bill large, compressed, straight at base, curved and acute at tip; wings long, pointed; tail ample, generally rounded; tarsi moderate, very strong; claws much curved, very sharp and strong.

There are said to be about seventy species of Eagles, of all countries, but this is probably considerably in excess of the true number. It has recently been determined that in the United States and Canada there are—excluding the Osprey—but two species; the "Bird of Washington" *(H. Washingtonii,* Aud.*)* being now considered as simply the young of the Bald or White-headed Eagle.

Genus **AQUILA,** Moehring.

Gen. Char. General form very large and strong, and adapted to long continued and swift flight. Bill large, strong, compressed, and hooked at the tip; wings long, pointed; tarsi rather short, very strong, feathered to the toes; claws sharp, strong, curved.

This genus is thought to include twenty species, and these are regarded as the true Eagles.

Aquila Chrysaetus, Linnæus.

THE GOLDEN EAGLE: RING-TAIL.

PLATE XVII.

This is the *Aquila Canadensis* of Cassin, Baird, and most late local American writers, the American bird having until comparatively recently been considered as specifically distinct from the *A. chrysaëtos* of Europe and Britain.

The Golden Eagle is described in most ornithological works as rare. Richardson and Swainson in their Fauna Boreali Americana restrict it to the "recesses of the sub-alpine country which skirts the Rocky Mountains," and state that it "is seldom seen

farther to the eastward," and Pennant and Latham give it as an inhabitant of Hudson's Bay. But since these records were written ornithology has made rapid strides, and our knowledge of the distribution of this noble species has greatly increased. Although, perhaps, "more particularly a species of boreal and Alpine distribution," it also has an extensive dispersion in the Canadas and the United States, being met with southward to about 35°. Northward it ranges to the Arctic coast and beyond. The Golden Eagle delights in solitude; it universally selects for its nesting site some almost, if not absolutely, inaccessible situation, generally far from the dwelling of man. Here, in some towering ledge of moss-covered rock, it constructs its nest and rears its eagle-brood, year after year for great—though unknown—periods of time. We have heard wonderful stories of the great age to which some pairs of these birds have lived, and nests have been pointed out to us which were said to have been occupied regularly, by the same individuals, during upwards of one hundred years. But who has not heard such stories? Possibly in some such out-of-the-way situations as the sub-alpine recesses of the Rocky Mountains, where the foot of man seldom treads, some of these birds may attain to this age, and return regularly to the same nest. But in Canada and the bordering United States we may venture to state that to-day there are few places where the Golden Eagle could retain his eyry, for even the space of a few years, without being discovered and destroyed. The oldest bird of this species which has come under my notice is that figured on Plate XVII. This individual is known to have lived for thirty-five years in confinement, and was when captured between three and five years old. Its death was brought about by a gathering in the throat, and at a time when the bird was in full vigor and had the prospect before him of a very old age. Throughout his whole captivity he tamed but little, and there were few besides his keeper, Mr. Passmore, who could approach him. He evinced a special antipathy to children, and particularly to babes in the arms of nurses. Mr. Passmore several times attempted to mate him with some other eagles of the same species in his possession, but without success, every attempt of this kind resulting in a terrible conflict,

and once in the death of his would-be mate. On one occasion a laborer, who had been at work for Passmore, determined to obtain some of the feathers of this Eagle which were lying on the floor of his large cage, thinking they could be put to some ornamental use at home. He therefore boldly entered, and without more ado commenced to gather the most perfect of these. While thus engaged, and when stooping, the fierce bird pounced upon him, and drove his talons through his garments, inflicting a deep scratch on his back. The man beat a hasty retreat to the door of the cage, and Mr. Passmore happening to arrive on the scene, the bird was beaten off, taking with him, however, as a war trophy, a large portion of the man's vest and shirt. The memory of this Eagle was astonishing. He remembered every insult offered to him for years, and always coupled it with the real offender. Mr. Passmore informs me that on one occasion his son went out to feed the Eagle, and when offering the bird the meat, it took it so quickly from him that his fingers barely escaped injury. Enraged at this, he seized a stick and struck the bird on the head. This the bird at once resented and made desperate efforts to reach him through the bars of his cage, and for weeks after refused to take food from this man's hands. Mr. Passmore's son shortly after this left for Australia, where he remained three years. On his return to Montreal he again paid a visit to his old friend the Eagle, the existence of which he had almost forgotten. But the bird had not forgotten him, for Mr. Passmore tells me he at once flew into a terrible paroxysm of rage at the first sight of the offender, refused his meat, and made desperate attempts to break through the bars of his cage. On several occasions in Toronto this same Eagle managed to get loose and would proceed on a reconnoitring tour through the neighboring grounds. He, however, invariably returned before evening to his own quarters. Before rainy weather the Golden Eagle is said to make a singular yelping or barking noise, which is kept up at short intervals until the rain sets in. In this way the bird figured foretold in a most marked manner the approach of storms—so truthfully in fact that Mr. Passmore and his bird were always consulted by the neighbors before an excursion into the country was undertaken.

I have never yet during any expedition met with this Eagle in its eyry; but have examined, and made long journeys on purpose to examine, some of their abandoned nesting sites. One of these was located on the great Hastings Road in Ontario, and in proximity to the York branch of the Madawaska river. Here in a ledge in the face of an abrupt wall-like cliff, known far and near as the "Eagles Nest Cliff," a pair of Eagles had built a large nest and occupied it regularly for a great number of years. Old settlers related stories told them by their parents concerning this nesting site, but all that I could definitely learn was that some thirty years before my visit to the place (1867) one, or both of the birds, had been killed, and none had since been seen near it. Another nesting site, but likewise now abandoned, was some miles to the eastward of that just mentioned, and in a precipice or wall of rock rising from the waters of Mazinaw Lake in Barrie township. This we reached by the Addington road, running northward from Napanee, and which skirts the western shore of the lake just named. The "Mazinaw Cliff" is also a far-famed object. It rises abruptly from the water to the height of about 265 feet, and its face is ornamented with Indian paintings and hieroglyphics. Here also one or more pairs of these birds had been in the habit of resorting to raise their young; but long previous to our visit to the locality the inroads of the lumber-men had frightened them off to parts even more rugged and remote. From "Mazinaw Cliff" the country on all sides is occupied by high bare hills of red granite and gneiss, and is of the most rugged and barren description. It must have at one time been a grand resort for the Golden Eagle, and from what I have gathered from old settlers in these parts, the birds had been unusually abundant. The Golden Eagle, however, is yet occasionally seen hovering over the "Opeonga Hills," in eastern Ontario; and to the northward of the Ottawa river it is of occasional occurrence. I have seen several beautiful specimens brought into Belleville from the back country, but from what particular part I could not ascertain. Several have also been taken in the vicinity of Toronto, Three Rivers, Quebec, and the north shore of the St. Lawrence. Mr. J. M. Lemoine of Quebec sends me an account of the capture of four of these magnificent Eagles at St.

Urbain, county of Charlevoix, near Baie St. Paul, in 1868. They were caught under figure 4 traps, made out of a crockery crate. The bait used was a live hen and chickens, tied by the leg to the crate. The Eagles circling round, swooped to the ground, and the hen and chickens seeing the spoiler, retreated under the crate, when, the Eagle pursuing, the person in ambush pulled the string, and the crate fell over the victim; meanwhile the hen and chickens rushed out through the interstices, leaving their would-be ravisher inside a "victim of misplaced confidence." Four fine Eagles were thus caught in one season, and Mr. Lemoine became the purchaser of two of them. These he kept in captivity for thirteen months, and eventually sold them to Capt. Rooke of the 52nd Regt., who carried them to England. The last Mr. Lemoine heard of them was through a paragraph in "The Field" newspaper, extolling their beauty. Further particulars respecting the capture and bearing of these birds may be found in "Maple Leaves."

Mr. Wm. Couper, to whom reference has previously been made, informs me that some fine adult specimens of the Golden Eagle have been shot near Quebec. The same person also records its occurrence, from personal observation, on the south coast of Labrador in June, and remarks that it probably breeds there.

Mr. McIlwraith of Hamilton does not mention its occurrence near that city, but alludes to the individual obtained near Toronto by Mr. Passmore, and states, "Its home, however, is in the mountainous regions of Canada East, and its visits here are few and uncertain."

I have myself met with it in the Chateauguay district, amongst the mountains and lakes bordering on the State of New York, and in the vicinity of the Owl Head Mountain, Lake Memphremagog. In this section it has been tolerably abundant, but of late years few have been observed. In winter it has been met with as far south as Washington, D.C., where, according to Coues and Dr. Prentiss, specimens were obtained for several years running. In the museum of the Smithsonian Institution are several that were

procured in the Washington market. In northern New York and in the mountainous portions of Maine, New Hampshire and Vermont, according to Dr. Brewer, it has been observed to breed, but so inaccessible is the position or site chosen that but few collectors have been so fortunate as to procure the eggs. Dr. Bryant met with a single individual of this species at Bras D'Or in the Gulf of St. Lawrence. In Nova Scotia there are several instances of its occurrence, but Dr. J. Bernard Gilpin records it as rare. He mentions one that was kept in confinement for several years by the late Dr. VanBuskirk; a pair trapped in the eastern counties by Mr. Downs; two other mounted specimens in St. John, N.B., and a very fine bird killed at Pictou by a woman. Dr. Gilpin further remarks:—"The adult bird is easily distinguished, and in the young the feathered tarsi, absence of scutellation on the tarsi, paler color, and less robust, or, as it were, less fatty look of legs and toes, distinguished it from the young of the bald. The most distinguishing mark on those I have seen was the prolongation of the loose feathers or hackles from the front and sides of the head to the shoulders. These, tipped with pale golden, and semi-erect, gave the bird a handsome crest, and added much to the intrepid look and stern eye, brow, and well curved, well hooked beak. The other parts were deep liver brown, the primaries black, and the shoulders rather lighter than the back." Dr. Gilpin also mentions some facts relating to this bird in captivity, illustrating its ferocity. The one we have alluded to as kept by Dr. VanBuskirk was exceedingly fierce. It attacked anybody approaching it, striking their legs and ankles with its talons. "This same bird pounced upon and seized a large tom-cat that was attracted under his perch by the fragments of meat dropped about, and immediately devoured it, paying not the slightest heed to its frantic cries and desperate contortions."

The eggs of the Golden Eagle have not to my knowledge been taken in Canada. Even in 1857 Dr. Brewer had no American specimens for description. There are, however, now in the Smithsonian Institution at Washington "no less than a dozen examples," and of these Coues gives the following notice:—

"The eggs are about spherical, the degree of prolation being slight, and there being usually no appreciable difference in the shape of the opposite ends. Four selected specimens measure, respectively, 2.65 by 2.15; 2.90 by 2,40; 3.00 by 2.35; 3.10 by 2.25—figures illustrating both the difference in absolute size and the variation in shape. None are so large as the one said by Audubon to have been 3.50 by 2.50; but I can readily believe that such dimensions are sometimes reached. Among the twelve, only one is white and unmarked; this closely resembles a Bald Eagle's. The rest are whitish (white shaded just perceptibly with neutral tint), variously spotted and splashed, without the slightest approach to uniformity in the size, number, or pattern of the markings. The color ranges from 'bloody-brown,' or rich sienna, to bistre and umber. There are many other spots, more or less obscure, and all apparently below the surface, showing grayish, drab, purplish, and neutral tint, by overlaying of the whitish calcareous matter in different thicknesses. Most of the markings are sharp edged and distinct, but others shade off gradually, while many are confluent, making irregular patches. As a rule they are pretty evenly distributed, but in some specimens are chiefly gathered about one or the other end, where the coloration consequently becomes continuous."

SP. CHAR. Head and neck behind light brownish-fulvous, varying in shade, frequently light yellowish, generally darker; tail at base white, often for the greater part of its length; the terminal portion glossy black; other parts rich purplish-brown, frequently very dark, nearly clear black on under parts of body; primaries shining black; secondaries purplish-brown; tibiæ and tarsi brownish fulvous, generally mixed with dark ashy.

Younger. Entire plumage lighter, and mixed with dull fulvous; under parts of body nearly uniform with upper.

Length, 30.00 to 40.00; wing, 20.00 to 25.00; tail, 12.00 to 15.00.

Iris brown. Bill horn-color; cere and feet yellow.

Genus HALIAETUS, Savigny.

Gen. Char. Size large; tarsi short; naked, or feathered for a short distance below the joint of the tibiæ and tarsus, and with the toes covered with scales; toes rather long; claws very strong, curved, very sharp. Bill large, very strong, compressed; margin of upper mandible slightly lobed; wings long, pointed; tail moderate. General form very robust and powerful; flight very rapid and long continued.

This genus contains some ten or eleven species only, inhabiting various parts of the world. These all subsist more or less on fishes, and hence are designated Fishing or Sea Eagles. One only inhabits Canada.

Haliaetus Leucocephalis, Savigny.

BALD EAGLE; WHITE-HEADED EAGLE.

PLATE XVIII. (Frontispiece.)

There is no end to the accounts of strange Eagles given by travellers and naturalists, and had this book been undertaken but comparatively a few years ago, I should have been sorely puzzled to have found specimens illustrative of the numerous *supposed* species and varieties. We now, however, know that in Canada and the United States there are but *two* species of Eagles, namely, the Golden Eagle and the White-headed or Bald Eagle, all others being nothing more than immature individuals of both or either of these species, or in some rare instances accidental varieties.

The beautiful plate herewith presented of the Bald Eagle is taken from one of the finest preserved specimens I have yet met with in Canada, lent for this work by Dr. John Bell of Montreal. It is a noble portrait, however, of a "mean" bird, and I regret exceedingly that its misplaced title of "Bird of America" obliges me to place it as a Frontispiece to the present work. Much rather would I have chosen the intelligent and industrious Fish Hawk or Osprey, upon whose hard earned booty the Bald Eagle largely subsists. In making this statement I am not merely re-

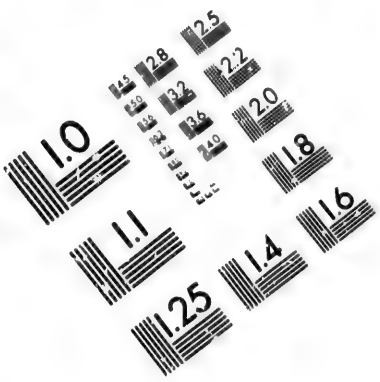
echoing what others have written on the same subject, but am honestly drawing from my own experience of the habits and general disposition of both birds.

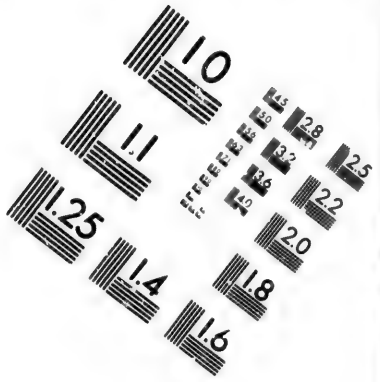
The Bald Eagle is numerous throughout the whole of Canada, and the fur countries, to the shores of the Arctic sea. It likewise extends across the continent from ocean to ocean, and is known to breed as far south as Washington, D.C. It is abundant along the Atlantic sea-board of the Eastern States, and particularly so along the coast of Maine, where its large nest in some lofty tree often forms a conspicuous land-mark. It also extends throughout the coasts of New Brunswick, Nova Scotia and Newfoundland, where it is commonly known to the fishermen as the "Grepe." Hence it extends across the Gulf of the St. Lawrence, breeds on Anticosti, inhabits the coasts of Labrador, and eventually reaches Greenland and Iceland. In these extreme latitudes it extends westward along the Arctic coasts, and Ross gives it as common in the McKenzie River district to the shores of the Arctic sea. From Great Slave Lake across to Lake Superior and Huron, it is particularly numerous, and breeds in all suitable places—ledges of rock and trees alike—throughout this region. It is also a very frequently met with species along the immediate shore and islands of the two lakes last named, and its nests are often found by the hunters, surveyors and natives. Prof. R. Bell informs me that the young of this Eagle are much esteemed as an article of food by both natives and hunters, and that he has himself assisted at such a meal.

The Bald Eagle also occurs throughout the area occupied by Lake Ontario and across the country again, in the vicinity of all the large lakes and prominent rivers to the waters of the Ottawa. I have observed it also near the mouth of the Cataraqui river, close to Kingston, and northward along this river and chain of lakes—the Rideau Canal—to Smith's Falls. In the mountainous Laurentian country, to the northward of Ottawa city, it occasionally is met with in the vicinity of the Gatineau, Lievre and Rouge rivers, as well as some of the larger lakes through the intermediate

country, but throughout this region it is by no means an abundant bird. From Lake Ontario it is more or less abundant along the the valley of the St. Lawrence outward to the Gulf, where we have already noticed its occurrence.

The Bald Eagle feeds largely upon fish—a fact recorded by every writer—which it obtains partly by plundering the Fish Hawk, but not to the extent generally supposed. It undoubtedly fishes for itself—when hungry and not too lazy—for I have repeatedly seen it plunge after its finny prey in precisely the same manner as the Fish Hawk. On one occasion, on Mud Lake, near the village of Newborough, on the Rideau, a Bald Eagle descended with terrible velocity and struck the water within half gun-range of our canoe with a tremendous splash and noise. The bird disappeared entirely from view for the space of two or three seconds, when he again reappeared with great floundering, and extracted himself from the water with apparent difficulty. In his talons was a large fish, I thought a sucker, which was grasped close by the head. In his upward flight the Eagle several times checked himself, to shake out his ruffled feathers and remove the water, and then, with rather labored flight, betook himself to a tree in a tract of drowned wood-land close by. On another occasion we witnessed two of these birds fishing, or taking turns at fishing, at the foot of the High Falls, Calabogie Lake, and observed them carrying their victims off in the direction of Dixon's Mountain—the local name for a high bluff of red gneiss rock, which skirts the western side of this lake. Several times we have witnessed and verified for ourselves the pursuit, capture, and plundering of the Fish Hawk by the Bald Eagle; but so has everyone who has journeyed by our "forest and stream" in Canada. One instance of this in particular may be recorded. Two large Eagles of this species together gave chase to a female Osprey or Fish Hawk, which but a moment before had succeeded in capturing a good sized lake trout. On first hearing the shrill screams of its pursuers, the poor bird made desperate efforts by straight flight to reach the drowned wood-lands in which its nest and young were located; but long before it reached these its course was inter-





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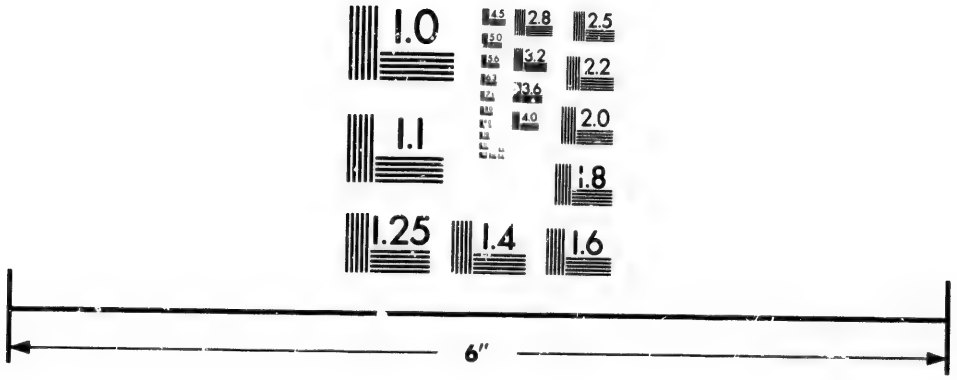

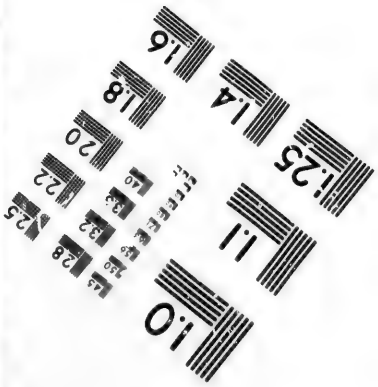

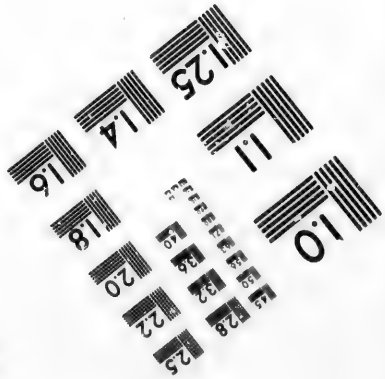

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cepted by one of the Eagles, while the other made repeated and fierce stoops at it from above. The Fish Hawk, however, still held on firmly to its prize, and made repeated attempts to baffle the onsets of the Eagle, in many of which it was successful. Before long both birds had risen to a great height—the one alternatingly surmounting the other; but we could still detect every now and then the gleam of the fish in the sunlight. Suddenly, the Fish Hawk was seen to descend with great velocity towards the water, and we thought the poor bird had been struck, and perhaps mortally wounded. It, however, as suddenly checked its downward course, and the Eagle which had as quickly followed it, shot past and far below it; and now once more the pursued bird made straight for its nesting site, but again was intercepted by the other Eagle, which made desperate by the protractedness of the chase, struck fiercely at it with piercing screams. Baffled on every side, wearied and blinded with the repeated buffettings of the Eagles, the Fish Hawk, with a scream of rage, let go its prize, which fell head long towards the water. This one of the Eagles as quickly followed, and, getting below it, turned upon his back and caught it in mid-air. Both birds then flew off with shrieks of delight with their ill-gotten booty.

Not always, however, is the Bald Eagle thus triumphant in the chase, and many a time have I seen the Fish Hawk far outstrip him in flight, and carry her prize off in safety. On such occasions the fury of the Eagle has no bounds, and he continues on the wing for hours, all the while screaming with rage.

Although fond of fish, the Bald Eagle has many other tastes, and these he satisfies as occasion serves. From what I have seen of him myself, and from what I have heard from others, I believe that he will devour anything which can be eaten, and this whether living or dead; a tom-cat, however—such as we described in the preceding article as forming the repast of a Golden Eagle—would be altogether too much for the Bald Eagle, for he is an arrant coward. Weak and sickly animals he will at once attack, and vulture-like, gouge out their eyes. Rotten fish and animals he

will sometimes so gorge himself on as to be incapable of flight; and instances are on record in which he has given chase to a vulture or turkey buzzard, and compelled it to disgorge its stomachful of filth to satisfy his own gross appetite. Truly a noble bird to choose as the emblem of a great nation! Franklin, while regretting that this bird had been so chosen, consoled himself with the reflection that few knew its portrait from that of the Turkey—he must have meant the Turkey vulture; and certainly its heavy build and many of its habits place it rather with these unsightly birds than with the Eagles.

The adult Bald Eagle, such as figured in the appended plate, is not the form most commonly met with, but rather the "Gray Eagles" and so-called "Birds of Washington," which are its young stages. These, as in the case of the young of the Fish Hawk, are considerably larger than the adult bird; but after the first moult the wing and tail feathers never again acquire their former dimensions. This fact—true also as regards a number of the Falconidæ—has led to much controversy respecting the specific identity of individuals, *e.g.*, Audubon's "Bird of Washington," only recently determined to be the young of the Bald Eagle. Audubon's figure, however, differs considerably from any specimen since taken, and as the bird from which his drawing was made does not seem to have been preserved, nothing more can be gathered respecting it. Many of the habits, given by Audubon as distinguishing his "Bird of Washington" from the Bald Eagle are now known to belong as well to this last bird; for instance the habit of clinging to and nesting in cliffs.

The Bald Eagle does not assume his adult plumage until after his third moult, that is in the fourth year; but the birds of the second year breed. Thus to the surprise of ornithologists the "Brown" turned into "Bald" Eagles in the fourth year, and these and the Golden Eagles were at last found to be the only representatives of the *Aquilinæ* in Canada and the United States.

Dr. J. Bernard Gilpin of Halifax, N.S., has made the Eagles of that Province a special study, and has examined a great number of specimens. He says, in determining our young specimens, and

preventing them from being confounded together, or even with the *Albicilla* or Sea Eagle of Europe, which occurs in Greenland —and one might occur here—the scutella or large scales on the feet and toes are the best tests. The Golden Eagle has none on the legs, and about three on each toe; the Bald Eagle has usually five on the leg, five on the inner toe, from eleven to thirteen upon the middle, eight upon the outside, and five upon the behind toe. These vary, especially upon the middle toe, and upon the leg; but a series of perhaps thirty gives this approximation. The greatest variation occurs upon the tarsi on the leg, and though nearly every specimen has five lateral scales upon the front, yet in some they are so small and obsolete that they have to be looked for, whilst in others they are very large, and extend nearly to the joints of the front toes, as in Audubon's figure. This difference, Dr. Gilpin says, is especially to be noticed, because Audubon makes "scutellation on tarsi and toes continuous with their length," a specific mark of his great Brown Eagle, *H. Washingtoniensis*, and he figures it so in his great work.

In fine, in any plumage our two Eagles may be at once distinguished by the legs, namely, feathered to the toes, *Aquila chrysaëtus*; naked on the whole shank, *Haliäetus leucocephalus*. The nest of the Bald Eagle is large and loosely constructed of sticks—from three to five feet in length—turf or moss and rank marsh grass. Sometimes these are five and six feet in diameter, and being repaired and added to annually, grow to prodigious proportions. The eggs are from three to four, dull white, and are unmarked; they are 3 inches long by 2.50 inches broad; but this size is subject to the same variations, as shown to belong to those of the Golden Eagle.

SP. CHAR. *Adult.* Head, tail, and its upper and under coverts, white; rest of plumage brownish-black, generally with the edges of the feathers paler. Bill, feet, and iris yellow.

Younger. Entire plumage dark brown; paler on the throat, edges of the feathers paler or fulvous, especially below; tail more or less mottled with white, which, as age advances, extends over a large portion of the tail, especially on the inner webs. Bill brownish-black; iris brown.

Length, 30.00 to 43.00; extent, 78.00 to 88.00; wing, 20.00 to 25.00; tail, 13.00 to 15.00.

This bird is accidental in Europe.

Genus **PANDION**, Savigny.

Gen. Char. Wings very long; general form heavy; bill short, curved from the base, compressed; tarsi very thick and strong; covered by small circular scales; claws large, curved very sharp; soles of feet very rough; tail moderate and rather short; cere hispid; nostrils obliquely curved; outer toe versatile.

This genus is represented in America by but one species—the Osprey or Fish Eagle. This is one of the many species of Raptores which, at one time supposed distinct from their European congeners, are now considered to be the same.

Pandion Haliaetus *(Linn.)* Cuvier.

OSPREY; FISH HAWK.

PLATE XIX.

This intelligent, active, and hard working bird is abundantly diffused throughout Canada and the whole of North America. In 1826 Bonaparte wrote respecting it: "It inhabits almost every part of the globe near waters; much more common in North America than in Europe." Subsequently, however, the same writer, in his "Geographical and Comparative List of the Birds of Europe and the United States," appears to have changed his opinion, as he calls the American Fish Hawk *Pandion Carolinensis*, and gives its habitat as "America generally." Other writers have since established other races, varieties or species, namely, the West Indian and South American as one, the Asiatic as another, and the Australian. The Fish Hawk of the whole of America, however, is to-day again reunited with the Osprey of the Old World, although for fifteen years these birds have been considered as distinct by the majority of American authors.

The Fish Hawk arrives on the coasts of New York and New Jersey towards the latter part of March, and shortly afterwards appears in Canada and extends rapidly through the fur countries to the Arctic ocean. It frequents lakes, rivers, cascades, and

rapids, and appears to delight particularly in rocky situations. Immediately upon its arrival in Canada it may be observed in the neighborhood of our great lakes, actively engaged in selecting a nesting site. This is almost invariably in a tree, situated in an open and conspicuous position. An old nest is often re-occupied, and when necessary, repaired. It is constructed of long sticks, moss, grass, roots, and *wrack* collected from the lake shores. I have met with this bird abundantly on each of our expeditions, not only in the valleys of the St. Lawrence and Ottawa rivers, but as well throughout the intermediate country, and in the mountains to the north of the last mentioned river. I have already alluded to this bird in my account of the Bald Eagle, and may here simply add that it is met with in the same regions as the latter. In the McKenzie River district it is also common, and extends to the Arctic coast. It, however, does not appear to breed on the "Barren Grounds" north of the Churchill; and Richardson did not observe it during his coasting voyage along the shores of the Arctic sea. Pennant informs us that it is abundant in Kamtschatka, and it is probably equally so on the Pacific coast of North America. Thus being likewise found on the Labrador coast, its range may be given as across the entire continent, from ocean to ocean. It is rather a timid and retiring bird, but is able to defend its eyry with great spirit, and when wounded is anything but an easy bird to handle. It never feeds on carrion; indeed Wilson goes so far as to state—"It is singular that the Hawk (Osprey) never descends to pick up a fish which he happens to drop, either on the land or on the water. There is a kind of abstemious dignity in this habit of the Hawk, superior to the gluttonous voracity displayed by most other birds of prey, particularly the Bald Eagle, whose piratical robberies committed on the present species have been already fully detailed in treating of his history." But, alas! for this "abstemious dignity," it is not supported by fact. The Fish Hawk will descend after a fish when he has dropped it—which he seldom does, however—and takes good care that his second grasp is more secure than the first. He will even condescend to pick up a stray fish wounded, or dead, which may happen to attract his keen eye, as it floats, white side uppermost, down the stream. On one

occasion, on cleaning out our canoe after a day's fishing on Mud Lake, on the Rideau, we threw out a number of large suckers, which had been caught early in the day, and started for the village of Newborough. These fish remained floating on the surface of the water, and their white bellies and red fins formed conspicuous objects. Hardly had our canoes got well under way again when three Fish Hawks flew directly to the spot, reconnoitred the floating fish for a few minutes, and then without more ado descended, and each bore away a prize. I have never, however, seen a *tainted* fish so taken up, although such were floating for days where Fish Hawks were numerous.

I further place little faith in the stories told of this bird attacking fish larger than its strength will allow it to carry off. Such stories certainly help to garnish an illustrated work on Natural History, but if not supported by fact the sooner they are weeded out and forgotten the better. My own experience convinces me that the Fish Hawk only attempts moderate sized captures. I have seen one hover for a long time over a rather large pike, and finally fly off without attempting a *stoop*, although the bird evidently felt much inclined once or twice to make the attempt. Trout, suckers and perch, and occasionally cat-fish, are its most usual prey, and these all of moderate size. Even should the bird sometimes be impelled by hunger to seize a large and powerful fish, I very much doubt the ability of any such fish to drag under water and drown a fluttering Fish Hawk, whose extent of wing ranges from sixty-four to sixty-eight inches. I should like to see the struggle, and note the seconds such a fish could retain such a bird under water. Besides, why should the Fish Hawk be obliged to retain his hold. He certainly ought to find no difficulty in loosing his grasp—for his talons are not barbed—unless indeed his high spirit and "abstemious dignity" prefers death to the relinquishing of his prey. Wilson, who records this improbable occurrence—and other writers have re-produced his story—also says: "The bodies of sturgeon and of several other large fish, with a Fish Hawk grappled in them, have at different times been found dead on the shore, cast up by the waves." I would simply

add that from my knowledge of our Canadian bird, *he is not so foolish.* In seizing a fish the Fish Hawk but seldom disappears under the water, and then only for an instant, when perhaps his prey has been deeper than calculated upon. More generally he barely seems to break the water, nor does he stoop from a great height, as some writers describe, but stations himself at a very moderate distance above the water, where, with quickly vibrating wings, he watches the movements of his "finny prey."

Near the villages of Newborough and Westport, on the Rideau canal, numbers of Fish Hawks breed yearly. I have counted thirteen of their nests from one stand point. All of these were built on dead, branchless trees, in a tract of drained wood land close to the canal. Several of those which we examined—as closely as the nature of the ground would permit—appeared to be largely made of bleached branches, dried grass and moss, and were lined with feathers. In one there was a great deal of paper in the form of show-bills, which probably had been dropped from a passing steamer. In another the moss was green, and there appeared to be inserted between the sticks a considerable quantity of fresh earth and green, growing grass. The number of eggs in the nest is from two to four; they are larger than ordinary hens' eggs, and vary greatly in color. Some are whitish, others yellowish cream-color, and others again reddish. They are all more or less marked with blotches and spots of reddish brown, but some very much more than others. Indeed it is difficult to find four or even a less number exactly alike.

In the mountain-lake region, about 100 miles to the north of the island of Montreal, according to Mr. Wm. Couper, the Fish Hawk is very abundant and nests. He says the young are fully developed by the end of September.

The Fish Hawk is also common in Newfoundland, arriving in May and retiring in the early part of October. It builds there "in trees in the extensive woods, either near the sea-coast or on some inland lake."

Both Wilson and Audubon considered the American and European Osprey to be identical.

SP. CHAR. *Adult.* Head and entire under parts white; stripe through the eyes, top of the head, and upper parts of the body, wings and tail, deep umber-brown, the tail with eight bands of blackish-brown; breast with numerous cordate and circular spots of pale yellowish-brown.

Bill and claws bluish-black; tarsi and toes greenish-yellow.

Young. Similar, but with the upper plumage edged and tipped with pale brownish, nearly white. Spots on the breast more numerous and darker colored.

Length, 23.00 to 25.00; extent, 64.00 to 68.00; wing, 19.00 to 21.00; tail, 9.00 to 10.50. Iris yellow; tail black; feet greenish yellow.

Mr. Sharpe, of the British Museum, remarks that the tail of the Osprey becomes more uniform brown with age, so that a strongly barred tail is a sure sign of immaturity.

With this species I terminate my review of the FALCONIDÆ or DIURNAL BIRDS OF PREY. In all, some fifteen or perhaps sixteen species have been enumerated as inhabiting Canada, and I do not anticipate further additions. Much, however, has yet to be learned respecting the immature forms of many of these, and further information on the nidification of nearly all of them, accompanied by accurate descriptions of the number, size, color and general markings of the eggs, is a special desideratum. According to Mr. Sharpe's recent "Catalogue of the Birds of the British Museum," the total number of species of DIURNAL BIRDS OF PREY at present known amounts to 377; of these about 23, he says, are doubtful or problematical; 326 are represented in the collection of the museum.

NOCTURNAL BIRDS OF PREY.

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Family STRIGIDÆ, The Owls.

Char. Form usually short and heavy, with the head disproportionally large, and frequently furnished with erectile tufts of feathers resembling the ears of quadrupeds. General organization adapted to vigorous and noiseless but not rapid flight, and to the capture of animals in the morning and evening twilight.

Eyes usually very large, directed forwards, and, in the greater number of species, formed for seeing by twilight, or in the night. Bill rather strong, curved, nearly concealed by projecting bristle-like feathers; wings generally long; outer edges of primary quills fringed; legs generally rather short, and in all species, except in one Asiatic genus, (*Ketupa*,) more or less feathered, generally densely. Cavity of the ear very large. Face encircled by a more or less perfect disc of short rigid feathers, which, with the large eyes, gives to those birds an entirely peculiar, and frequently cat-like, expression. Female generally larger than the male.

According to Cassin there are about one hundred and fifty species of Owls,* which are found in all parts of the world, of which about forty are inhabitants of the continent of America and its islands. Ten are known to occur in Canada.

The larger species subsist on small quadrupeds and birds, but much the majority prey almost exclusively on insects. A few of the species are strictly diurnal, and in their general habits seem to approach the birds of the preceding family,

Sub-Family BUBONINÆ, The Horned Owls.

Char. Head large, with erectile and prominent ear-tufts. Eyes large; facial disc not complete above the eyes and bill; legs, feet and claws usually very strong.

This division contains numerous species, some of which are very large, but the greater number are medium sized or small. They inhabit all parts of the world except Australia.

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* According to Sharpe's "Catalogue of the Birds of the British Museum," the total number of species of Owls is now about 190. The British Museum contains 153, so that 37 are still wanting to complete the collection; the specific distinction of perhaps 10 of these is dubious.

GENUS **BUBO**, CUVIER.

GEN. CHAR. Size large; general form very robust and powerful. Head large, with conspicuous ear tufts; eyes very large; wings long; tail short; legs and toes very strong; bill rather short, strong, curved, covered at base by projecting feathers.

This genus embraces the large Horned Owls, or Cat Owls, as they are often called in Canada. They are most abundant in Asia and Africa, and there is thought to be about fifteen species in all countries. Only one species occurs in Canada, and in fact in the whole of North America; this is subject to great variations in plumage and size.

Bubo Virginianus *(Gmelin)* BONAPARTE.

GREAT HORNED OWL; CAT OWL.

PLATE XX.

Sometimes called the Eagle Owl by our Old Country settlers, but not to be confounded with the *Bubo maximus*, or Great Eagle Owl of Europe, which occasionally pays a visit to the Orkneys and northern coast of Scotland. The Great Horned Owl belongs to the Western Hemisphere, and is universally distributed in America from the Arctic circle to its most southerly extremity; as well as from the Atlantic to the Pacific oceans. It is an abundant and resident bird in Canada, and there is not, perhaps, a city, town or village in the whole Dominion which cannot boast of one or more stuffed or living specimens. There is but one species, but this is subject to such variety in size, color, and arrangement of markings, that our ornithologists have long been puzzled in determining whether in reality there were one, two, or even more species. In Canada, I may simply remark, we have three tolerably constant forms or varieties, namely: one in which the whole ground color is dark, another of a lighter or more ferruginous tint, and a third of an exceedingly light or whitish ground color, sometimes, though rarely, approaching to almost pure white. This last form has a general faded-out appearance, and is very

like some stuffed specimens I have seen that were really bleached by too strong sun-light. In some of the other species of Owls we notice a similar diversity in the colors of individuals of the same species, which really amounts to little more than a gradation from a very light to a more intense tint. In the majority of instances, however, the plan of the markings is the same throughout in the same species.

Cassin has grouped the different colored, and some different sized Great Horned Owls into four leading varieties, namely: *Atlanticus*, *Pacificus*, *Arcticus* and *Magellanicus*, and at one time attempted to give to each of these a defined geographical distribution. This, however, he and others soon found to be futile; for after establishing these four races or varieties in 1854, Cassin subsequently writes: "These varieties are evidently not to be recognized as at all strictly geographical, nor so much so as intimated in our notice of them alluded to above."

In Canada, and in Massachusetts and neighboring States, specimens have of late years been taken that typically represent each of these varieties; and in the vicinity of Toronto and westward we find abundant evidences of the occurrence of the very dark *Atlanticus* and the very light colored *Arcticus*. The last variety, however, is exceedingly rare at and around Montreal and Quebec, where, in the greater number of specimens collected, the colors are either very dark or decidedly ferruginous. Referring to the pale variety, Dr. Coues remarks that: "This peculiarity of coloring seems to mark, in varying degree, Alpine specimens, even so far south as New Mexico." The Great Horned Owls, then, for the present, in all their variations of garb, may be considered as belonging to but one species—the *Bubo Virginianus* of authors.

In Canada the great Horned Owl is met with throughout the year, and is known to breed in a number of localities in both the Province of Ontario and of Quebec, and is said by Reeks to nest in Newfoundland. These Owls, however, are particularly numerous, and are more often met with during the fall and winter months than

in the summer, from which circumstance I am inclined to believe that the majority breed in the fur countries, and extend during the nesting season even to very extreme latitudes. In the McKenzie River district, Ross speaks of its occurrence to the Arctic coast and beyond. The same is also true respecting the Long and Short-eared Owls, the common Grey or Barred Owl, and the Hawk Owl, although there is not a doubt but that a number of pairs of each of these species nest regularly in suitable places throughout the Canadas. It is decidedly an uncommon event to meet with an Owl's nest, and I know of but few instances on record where the eggs of any of the Owls have been taken by collectors in Canada. This may in a measure be owing to the nocturnal habits of many of the species, and the out-of-the-way spots these birds select to nest in, as well as to the smallness of the number of our field oologists. The Great Horned Owl is not very often seen abroad during the day, but I have many a time stumbled upon one or more of them in their cozy retreats, in some of our cross-country excursions. It is, however, a strictly nocturnal bird. During the glare and heat of the mid-day sun it quietly dozes in some well shaded grove or cedar thicket, but is ever on the alert, and cannot be surprised, or, as some imagine, taken by the hand; but no sooner has the sun lowered and the heat somewhat abated, than, slipping from his perch, he flits noiselessly from one ledge of rock to another in eager search of some living object. On several occasions we have drawn this Owl from his retreat in broad day-light by accidentally burning something in our camp fire, the smell of which aroused his slumbering appetite. In dark and rainy weather these Owls are on the move all day long, and just before a storm I have heard their sepulchral notes from every part of the surrounding forest. These cries I cannot describe, nor can I attempt to set them to music, as a writer in the American Naturalist has done in a very happy manner with the sounds produced by some of the insect tribes. In my opinion were I even to succeed in accurately representing by note the night concerts of these birds, I should find still greater difficulty in procuring a human being able to give utterance to them. In some of my note-books, however, I find various attempts made to give a

readable description of their weird music, but none of these satisfy me. A common expression, if I may so term it, or hoot, is an often repeated *Oh-hoo, oh-hoo! oh-hoo, oh-hoor-r-r!* This is started by one individual in a hollow, reed-like note in one part of the forest, is taken up by another and another in other parts, until the air resounds with a whirring noise like that made by a gigantic fanning mill. Suddenly, in the midst of this uproar, an old patriarch, evidently in a great rage, and in a harsh, terrible voice, shouts *Waugh-hoo! waugh-hoo-hoo-hoo!* and immediately every other cry ceases, and for some minutes the silence of the forest is resumed. Again this is broken by the single hoot of some daring individual, and again is answered from side to side until the uproar is at its former height, when once more it is suddenly checked by the bad tempered individual with the harsh voice. It was not a bad description of such a concert, that given by one of our men one night when we had been particularly bothered by the hideous uproar outside, and the more musical but more terrible song of the mosquito inside our tent; he said it seemed to him as if one of the "noisy critturs" cracked a joke, laughed at it himself, got the others to laugh, and then suddenly getting in a bad humour, asked them "what in thunder they were laughing at."

The nesting sites of these birds are variously chosen. Sometimes the eggs are laid on the ground, more generally in a bulky rude nest, not unlike a crow's, constructed in a lofty tree, or in the hollow of a decayed stem. Reeks describes a nest he observed in Newfoundland "*built on the ground*, in a tussock of grass in the centre of a pond," this same nest having been for some time previously occupied by a pair of wild geese. For my own part I believe the birds are simply influenced in their choice of a nesting place by the advantages this offers in respect to abundance of food. Old nests of other birds I know to be sometimes used, and perhaps more generally those of the Crow and Hawk. I have also heard mention made of the eggs being found amid moss-grown rocks, on which they had been laid without any intervening material.

The number of eggs varies from two to five, and even six;

but two or three is the average number observed in most of the nests met with in Canada, and two the number of young hatched. They are subspherical, colorless, and measure about 2¼ inches in length by about 2 inches in breadth. Mr. McIlwraith of Hamilton informs me that the Great Horned Owl nests in the vicinity of that city, and builds a large, coarse nest, composed mostly of sticks, but warmly lined with wool and feathers. This nest is usually placed in the hollow of a decaying tree where a limb has been broken off; but sometimes in the crotch of a pine-tree where a branch or branches join the main stem. The same gentleman also informs me he has often seen the young of this species in a half fledged condition in the hands of country lads, "from whom they did not receive the very best treatment." The feathers at this age are loose and downy, and the eyes are strangely conspicuous; in fact they have no resemblance whatever to the parent birds, but rather look like a shapeless bundle of greyish-brown wool, into which have been stuck, as if for a joke, a great beak and large pair of eyes. The parent birds are rather inattentive to their young, and often leave them for long intervals to their own devices; and many a nest has been robbed with impunity on such occasions by some little ragged urchin belonging to the nest-and-egg-hunting fraternity of the country school. But woe be to that same little urchin if he miscalculates his opportunity, and is caught in the act by the enraged female parent. It were better for him — well, had he remained at school and taken for his lesson the fierce disposition of the Great Horned Owl when tampered with.

The prey of this Owl consists of rats, squirrels, mice, rabbits, partridges, pigeons, poultry, and even birds of its own family, such as the Long and Short-eared Owls. Indeed when hungry it will pounce upon and devour, or attempt to devour, anything of a moderate size in living shape. I have known one to destroy a whole family of kittens, and even attack a large tom-cat; in this last, however, he met for once with his match, and parted with some of his plumage.

Mr. McIlwraith states that on two occasions he has killed individuals so thoroughly saturated with the stench of the skunk

that he was glad to leave them where they fell, shewing clearly that these birds had recently been in contact with that animal. I have kept a pair of these Owls in confinement and found them to be untameable. They were always treacherous, and one could never feel sure in offering them a tempting piece of meat whether they would not prefer the ends of the finger and thumb holding it. They invariably made a loud hissing noise when approached, and snapped their mandibles fiercely when in any way tormented, or at the sight of a dog. One showed great antipathy to a living Snowy Owl in my possession, and made desperate attempts to reach him through the bars of his cage. This White Owl, however, from what I knew of his disposition and prowess, would have been rather more than a match for any one of the other species, and the conflict probably would have ended by his devouring his opponent.

During the winter months the Great Horned Owl is often hard-pressed by hunger, and does not hesitate to attack boldly the farmer's poultry. For this, however, he generally pays the extreme penalty of the law, for among our *habitants* there is no mercy shewn to a "Cat Owl." The bird figured on Plate XX was caught in a trap by a farmer near Montreal, who had been for some time missing some of his daintily-fed poultry. He was brought to me alive and in splendid condition, and I spent some days studying his varied attitudes before killing him. Immediately after his death numerous measurements were taken, and girths of paper were fastened at regular intervals around his body and subsequently slipped off tail-wards. From these measurements and girths he was stuffed and mounted, and set in one of the positions he had most generally assumed when living. I consequently can present this figure of the bird as true to life, and as a portrait of one of the finest stuffed specimens of the Great Horned Owl to be met with in any of our collections.

This bird is so well known that space need not be occupied in giving its specific characters, but I may briefly give a sketch of the pale or light-colored variety, *Arcticus*, which is often met with in Ontario, and respecting which I fully agree with Mr. Cassin in

his statement, that "this variety is better entitled to be regarded as a distinct species than any other."

Richardson's and Swainson's White Horned Owl, *Bubo Arctius*, was probably a very white example of this variety, if not a form due to albinism.

[illegible]—*Bubo Virginianus Arctius*, Cassin.

[illegible] Light colored, [illegible] nearly white. General plumage of a predominating pale yellowish white or cream color of various shades from nearly pure white to nearly the color of the two preceding varieties; under parts generally lighter than the upper, and always throughout the plumage marked and barred with brown, frequently pale and indistinct, but in the same general manner as in *Virginianus*. Tarsi and toes generally very light, frequently nearly pure white; size [illegible] the same as that of adult *Virginianus*, and the plumage with more or less of the [illegible] feathers on the face pale white, or pale cream [illegible]

[illegible] 21 to 23 inches; wing, 14½ to 16; tail, 10 to 11 inches.
Male [illegible] " " " 14 " 15; " 9 to 10 "

Genus **SCOPS**, Savigny.

Gen. Char. Size small; ear-tufts conspicuous; facial disk imperfect in front. Bill short, nearly covered by projecting feathers; wings long; tail rather short, frequently curved inwards; tarsi rather long, more or less fully covered with short feathers; those on the toes hair-like.

There are said to be *about* twenty-five species of *Scops*, some of these, however, are exceedingly doubtful, and it is probable that this number will yet have to be considerably reduced. The same remark may be said to apply to most of the genera of both the *Falconidæ* and *Strigidæ*.

Scops Asio *(Linn.)* Bonap.

SCREECH OWL; MOTTLED OWL; RED OWL.

PLATE XXI.

This droll little Owl is the second smallest species in Canada, and probably the whole of North America. Though represented in nearly every museum and many of our private collections, it is but seldom met with by the ordinary traveller, and is generally regarded as anything but a common bird. This apparent scarcity of individuals, however, is in a great measure due to its habits, which are strictly nocturnal, and perhaps the greater number of the specimens which have been taken have been captured alive during day-light, when the bird may be said to be almost blind. It is undoubtedly one of our most nocturnal species.

This Owl has been the subject of much controversy among American ornithologists, and probably more has been written upon it than upon all the other species of the family together. This has arisen from the fact that the individuals of the species appear in two distinct stages of plumage — a *red* and a *gray*. These have been described by some naturalists as two distinct species, and by others as merely different stages of but one; while a third class of writers maintained that the *red* plumage was due

to neither age or sex, but was a garb occasionally assumed by adult and young birds of both sexes. The whole question has been discussed at great length, but has finally resulted in the pretty general acceptance of the last—or some closely related—view. This, however—at any rate as regards the bird in Canada—I am not yet by any means disposed to accept. Coues observes, "The same rufescent phase occurs in other species of Owls. . . . and is apparently analogous to the melanotic condition of many Hawks." On the other hand Dr. Bachman distinctly states that the young of the Mottled or Screech Owl are *red* for two years, when they change to gray; and Cassins remarks that the young become *red* when the feathers are fully grown, and afterwards gray again. These last two statements I at once accept, and give here as probably the most correct view, as they are strongly supported by such facts as have come under my own observation in Canada.

In a very old note-book, which contains some of my ornithological observations, made long before I was aware that the Screech Owl had furnished such a problem to naturalists, I find the following note: "In nearly all the young birds which have come under my notice there are traces of the red plumage, and it is probable that at one particular period of their lives these assume the entire red plumage, which they keep even until old enough to raise broods themselves. The union of *red* and *gray* birds as parents, sometimes observed, is simply an old or fully adult male choosing a young mate, or *vice versâ*." I have further taken specimens shewing clearly the final stage just previous to the entire gray plumage. In these the rufous portions of the plumage were only descernable upon close inspection, and by the ruffling of the feathers. By far the greater number of specimens taken in Canada up to the present year (1876) are gray, and in my recent enquiries instituted in connection with the present work, I have been surprised to learn how sparingly the "Red Owl" was represented in either our public or private collections. This fact, however, does not in any way support the view I am inclined to take of this most intricate question; for, as a general rule, in our

Falconidæ and *Strigidæ* it is the immature or young individuals which are most commonly met with in our collections. Consequently we should expect to find more *red*—if this be the young stage—than *gray* owls, and particularly so when we know that the birds remain long enough in this plumage to become parents.

Being extremely anxious to arrive at something definite and final on this subject, I this winter (1876) wrote to naturalists, collectors, and hunters in all parts of the Provinces of Quebec and Ontario, requesting facts relating to the occurrence of this species. The replies from these sources, however, only confirmed still more the rarity of the "Red Owl," while they also evinced that the species was anything but abundant in either of its forms. Mr. Thos. McIlwraith, writing from Hamilton, says, "The Screech Owl is tolerably common with us, the young being frequently taken during the early summer. A real good *red* bird is not often met with, perhaps not once out of one hundred captures. I have, however, heard from other persons living within one hundred miles of this city that with them the *red* was the most common."

In the neighborhood of Toronto a few *red* individuals have been taken, and one of these obtained in 1857 is preserved in the museum of the University College. One or two have also been taken in the vicinity of Belleville. In the museum of the Nat. Hist. Soc. of Montreal there is one *red* specimen unlabelled, probably taken on the island or near the city. In the neighborhood of Quebec I can find no records of the occurrence of either *red* or *gray*, and Mr. Wm. Couper, who resided and collected in this city for a number of years, tells me he never met with one or had one brought to him. From Halifax, N.S., Mr. Bernard Gilpin writes me, "Neither Mr. Downs or myself have met with this species (in either plumage) here, though Reeks says it is common in Newfoundland, and I know common in the New England States." Turning to Reeks' "Notes on the Birds of Newfoundland," we find the Mottled Owl described as a summer migrant and "tolerably common." He further remarks: "As this is one of the

commonest Owls in North America, it seems strange that Mr. Downs should not meet it in Nova Scotia, especially as it frequents the States bordering on the Atlantic more than those inland."

From the foregoing records we cannot but conclude that the *red* stage of the Mottled or Screech Owl is of rare occurrence in Canada. The ordinary or *gray* stage, however, may be said to be pretty generally diffused. It is just possible that the plumages of these birds "are purely fortuitous, and characteristic of neither sex, age, nor season," as remarked by Coues, but I am more inclined to believe that the *red* stage is that *occasionally* assumed by young individuals but *never* by really adult birds. Wilson described the *gray* Mottled Owl as *Strix nævia*, and the *red* as *Strix asio*, and a number of ornithologists still regard these as specifically distinct birds. This view, however, has long ago been abandoned by our leading authorities. Color being the only distinctive difference, is not sufficient grounds for the separation of the species. It is true that Wilson mentions the Mottled Owl (*nævia*) as a native of the northern regions, extending its migrations as far south as Pennsylvania in winter, and states the "Red Owl" (*asio*) is not migratory. But these distinctions go for naught when we explain that our extended knowledge now proves that the species is not by any means a "native of the northern regions," not having been met with in the fur countries, being comparatively rare in Canada, while it is known to be most numerous along the States on the Atlantic coast, and southward to Georgia, and Florida. It also occurs in Mexico and Guatemala. In California it is given by Dr. Cooper as "quite common in the wooded parts of the State, and often captured in houses."

The specimens figured on the accompanying Plate represent birds in both stages of plumage—the *red* being the outside figure. They were taken in the vicinity of Cote St. Paul, on the Lachine canal, a short way out of Montreal, where the *gray* birds are said to be not unfrequent. I am convinced that it is entirely owing to its nocturnal habits that this Owl is so seldom met with; but Reeks goes a long way to the other extreme when he states that it "is one of the commonest Owls of North America."

Sp. Char. Above pale ashy-brown, with streaks of brownish-black, and irregular mottlings of the same mixed with cinereous; beneath ashy-white with brownish-black stripes, and transverse lines of the same; face, throat, and tarsi ashy-white, irregularly lined and mottled with pale brownish; quills brown with transverse bands, nearly white on the outer webs; tail pale ashy-brown, with about ten transverse narrow bands of pale cinereous; under wing coverts white, the larger tipped with black. (*Scops nevia.*)

Younger. Entire upper parts pale brownish-red with streaks of brownish-black, especially on the head and scapulars; face, throat, under wing coverts, and tarsi, reddish-brown; tail rufous with bands of brown, darker on the inner webs. (*Scops asio.*)

Young. Entire plumage banded with ashy-white and pale brown; wings and tail pale rufous.

Genus **OTUS,** Cuvier.

Gen. Char. General form longer and more slender than in the preceding genera. Head moderate; ear-tufts long, erectile. Bill rather short, curved from the base; facial disc more perfect than in the preceding; wings long; tail moderate; tarsi and toes covered with short feathers; claws long, curved. Eyes rather small, and surrounded by radiating feathers.

This genus contains ten or twelve species of various countries, all of which are more handsome birds than are usually met with in this family. Only one occurs in Canada.

Otus Vulgaris var. Wilsonianus *(Less.)* Allen.

LONG-EARED OWL.

PLATE XXII.

The American Long-eared Owl is now considered by our leading ornithologists to belong to a different geographical race from that of Europe or Britain; but I can see no appreciable difference in the birds. The American birds may be and generally are somewhat darker in color, but in all specific details and general habits they resemble their European congeners; consequently, in my opinion, it would much simplify matters were the birds of both continents classed and described under the one name. This has been done with our next species, the Short-eared Owl, which likewise inhabits both continents; for though ornithologists have tried hard in its case also to discover sufficient distinctive characters by which to separate American from European individuals, their efforts so far have signally failed, and Coues remarks that he is "unable to appreciate any constant or tangible difference between the European and American bird, although the latter may average slightly larger and a shade darker." But as anything further I might bring forward on this oft mooted question would only be a rehearsal of old and threadbare conjectures, I for the present refrain; simply adding that, as ornithology in America has now many zealous and able devotees, the truth must sooner or later be arrived at. This probably will tend toward a great reduction

in the long list of Latin names now applied to *supposed geographical races*, local varieties, and even species. For the present, however, I follow Coues, Allen, and others, in giving the American Long-eared Owl as *var. Wilsonianus*.

This Owl arrives in Canada sometime during the month of April — early or late, according to the weather — from its winter quarters in the Atlantic States, and soon extends throughout our Provinces. It also reaches the fur countries, where numbers remain during the summer for the purposes of nidification. Individuals have been met with as high as latitude 60°, but seldom beyond this, and the bird cannot be said to be a very boreal species. It nests both throughout the Middle and Atlantic States and Canada, but this perhaps rather sparingly; and as it is of retiring habits, it is not commonly met with. During the winter months it is particularly abundant in the States bordering on the Atlantic, but at this season is rarely met with in Canada. With us the bird is decidedly most numerous in spring and autumn, and there is no doubt that the majority pass their summer in the fur countries. Indeed from the lists I have examined, the Long-eared Owl appears to be of rare occurrence in most parts of Canada during the summer; but from my knowledge of its habits I am inclined to think it is more abundant than is generally supposed.

The Long-eared Owl is not particularly fond of man's society, and rather shuns the neighborhood of his dwellings. It delights in the gloomy solitudes of pine forests and dark groves of evergreens, where we have often surprised it on some of our short-cuts or portages from one inland lake to another. It also, however, during twilight, frequents the skirts of clearings, where it hunts diligently for its favorite prey —field-mice. Insects also are much sought after, and some of the birds we killed had their stomachs filled with grasshoppers, black field-crickets and coleoptera, broken up into small fragments.

I do not think the Long-eared Owl preys much upon birds during the summer, as we never found the remains of these in

any of the individuals whose stomachs were examined ; but during the winter months, when insects are scarce, it is said by American writers to make great havoc among the smaller of the feathered tribes.

The Long-eared Owl, in the general color of its plumage and arrangement of markings, much resembles some of the fulvous individuals of the Great Horned Owl species, and I have met with more than one person who firmly believed that the first-mentioned was the young of the last. The birds also resemble one another in some of their habits, such as dozing during the day in the gloom of the forest, hunting in the twilight and through the night, making occasional excursions by daylight, and in one or other of their modes of nidification. Their prey, however, is very different, for as we have already seen in a preceding article, the Great Horned Owl boldly attacks large quadrupeds and powerful birds, and indeed almost anything in moderation that crosses his path.

The Long-eared Owl is not by any means a strictly nocturnal species. It hunts during the day in gloomy weather, and sees well at all times. It is not one of those species which may be taken by hand, but is a vigilant, wide-awake bird, and suspicious at all hours. We have met with it on most of our expeditions in the Province of Ontario and during nearly every month of the summer and autumn, and consequently believe it nests somewhat abundantly. Its nest, however, has but seldom been found, and its eggs are represented in few of our collections. This is doubtless partly owing to the retiring habits of the bird—but, as we have before observed, the nests and eggs of all the Owls are difficult to discover. A nest of this species was found during the summer of 1870 by Mr. Craig of Montreal, at Hochelaga (near Montreal), containing four eggs. It was built in the branch of a spruce tree some 25 feet high, about 18 or 20 feet from the ground. The nest was like that of a crow, but larger, and made roughly of twigs and moss. Two of these eggs are now in the collection of the Montreal Nat. Hist. Society. They measure 1½ inches in

length, by 1 5-16 inches in breadth; are subrotund and white.

This Owl sometimes nests in the hollows of trees—like many other species of the family. It also sometimes lays its eggs on the bare ground—a habit not uncommon in the fur countries—and has even been known to deposit them in the nests of other birds, such as the Crow and Night-Heron. I have been informed by hunters that these Owls generally build rude nests, something like a Crow's or Hawk's, and that the same birds often return regularly to the nest year after year. The Great Horned Owl, as we have seen, also sometimes builds a nest for itself, but more often chooses the hollow of a tree or deposits its eggs on the ground. I do not think any of the Owls adhere strictly to one particular course respecting their nidification, but rather vary their methods to suit circumstances. Buffon remarks that the Long-eared Owl rarely constructs a nest of its own, but not unfrequently occupies that of others, particularly the Magpie. Wilson describes it as nesting among the branches of trees, and also records an instance of its using the nest of a Qua-bird or Night-Heron. Sir John Richardson gives it as nesting on the ground, and laying from three to four whitish eggs, and states that a nest was found in this position by Mr. Drummond. He also, however, adds that it sometimes uses the deserted nests of other birds, but whether this is from his own observation or is borrowed from Wilson—whom he often quotes—is not apparent. Gentry says: "The nests are usually constructed of rude sticks, sometimes of boughs with the leaves adherent thereto externally, and generally, but not always, lined with the feathers of birds. The same nest is made use of for several successive years." This writer further remarks that no instance of its laying in nests of other birds came under his notice. Audubon, however, again ascribes this habit to the Long-eared Owl. Thus we have authentic accounts of at least three methods resorted to by this Owl in nesting, namely, on the ground, in nests of its own construction, and in those of other birds, such as the Magpie, Crow, and Night-Heron.

Apparently the Long-eared Owl raises two broods at least in one season, for it is known to lay in the fur countries in April,

and have young well grown in May, and nests with eggs almost hatched have been found in July.

Mr. McIlwraith gives this Owl as "not common" around Hamilton. Reeks says it is a summer migrant to Newfoundland. Dr. Gilpin of Halifax, N.S. writes me that it is a rare winter visitant in that Province, but does not mention it as occurring in summer; and Couper states it is abundant in the dense pine forests north of the city of Quebec. I have met with it several times around Montreal, and have taken specimens on our mountain and on the Nuns' Island opposite the city, where I know it breeds. On this island the Qua-birds or Night-Herons also nest regularly,* and it would be interesting to ascertain whether the Long-eared Owl ever occupies their nests. I do not think that this Owl is rare in any part of North America, but there are seasons when it is more abundant than others.

The sexes, excepting a trifling distinction in size, are not appreciably different.

SP. CHAR. Ear-tufts long and conspicuous; eyes rather small; wings long; tarsi and toes densely feathered; upper parts mottled with brownish black, fulvous and ashy white; the former predominating; breast pale fulvous with longitudinal stripes of brownish-black; abdomen white; every feather with a wide longitudinal stripe, and with transverse stripes of brownish-black; legs and toes pale fulvous, usually unspotted, but frequently with regular narrow transverse stripes of dark brown; eye nearly encircled with black; other feathers of the face ashy white, with minute lines of black; ear-tufts brownish-black, edged with fulvous and ashy white; quills pale fulvous at their bases, with irregular transverse bands of brown; inferior coverts of the wing pale fulvous, frequently nearly white, the larger widely tipped with black; tail brown, with several irregular transverse bands of ashy fulvous, which are mottled, as on the quills. Bill and claws dark; irides orange-yellow.

Total length—Female, about 15 inches; wing, 11 to 11½; tail, 6 inches.
" —Male, rather smaller.

* See "Notes on the Night-heron" by the Author, Canadian Nat. and Geol. New Series, II. p. 53.

GENUS **BRACHYOTUS,** GOULD.

GEN. CHAR. Ear-tufts very short and inconspicuous. General form rather strong; wings long; tail moderate; legs rather long, which, with the toes, are fully covered with short feathers; claws long, very sharp, and rather slender; head moderate; eyes rather small, surrounded by radiating feathers; facial disc imperfect on the forehead and above the eyes; tail moderate.

This genus contains four or five species only, the best known of which is the Short-eared Owl (*Brachyotus palustris*) of Europe and North America.

Brachyotus palustris (*Bechst.*) GOULD.

SHORT-EARED OWL.

PLATE XXIII.

This unassuming but really handsome little Owl is perhaps the most widely diffused species of the whole family. It inhabits not only the whole of America, but also Europe, Asia and Greenland, the West Indies and the Gallapagos. Specimens from all these countries do not appreciably differ from one another, and the habits of the bird are the same everywhere. Some ornithologists—belonging to that class which has done more to complicate than simplify our nomenclature, but which now happily is in the minority—have tried hard to distinguish the American individuals as larger and much darker; but in the hundreds, if not thousands, of skins that have now been examined from every part of the world, the same diversities in size and color alike distinguish the individuals of each country; and in Canada and the United States we have forms ranging from almost albinism to the darkest known stages.*

*An interesting state of the plumage of this Owl is exhibited by two pairs taken on Muskeget Island, Massachusetts, about July 1, 1870, by Messrs. C. J. Maynard and William Brewster, in which the color is so light as to almost suggest their being albinos. They are many shades lighter than the specimens of this group from the interior, and show clearly, when taken in connection with the light race of *Arvicola riparius* (*Arvicola Breweri*, Baird), also occurring on this small

The specific name of this species—now generally adopted—*palustris* is highly appropriate, so frequently is it found in moist and fenny places. It is but seldom met with in pine forests, in the gloom of which the Long-eared Owl delights to doze, but rather in clumps of alder or willow bushes in open and marshy tracts of country. It has often been observed many miles away from timbered lands, and on open prairies; but it particularly delights in the rank herbage bordering on rivers and streams.

The Short-eared Owl arrives in Canada towards the end of March, or perhaps more generally the beginning of April, in considerable numbers, and settles down in suitable localities everywhere. The majority, however, undoubtedly continue northward to the fur countries to raise their young. The date of their arrival amongst us may be always told to a nicety, as many of the early birds are killed by duck-hunters and brought into our markets. I have noted twenty-five exposed for sale within one week, and several of these were living. One of them I kept alive for some time, and had abundant opportunities of studying its various attitudes. When sitting easily at rest the unusual length of the wings was very perceptible. These were generally held in a slightly drooping position, their extremities decidedly resting upon the perch on which the bird was sitting, or at other times on the ground. The "inconspicuous" ear-tufts were seldom visible. The whole bearing of this Owl appeared to be unassuming and gentle, and it does not seem to be possessed of that voracity which is common to most of the other species of this family. It was only at times I could coax him to eat raw meat, and unless this was cut up fine he would not touch it. He drank water freely, and rather delighted to dabble in it. The flight of this bird was perfectly noiseless. During the twilight he was particularly active, and wandered from one corner of his apartment to the other, but without the slightest sound. Unfortunately for the poor bird, he

sandy island, the effect of the combined influence of an absence of shade and the increased light caused by reflection from the light-colored sand. The influence of similar circumstances is seen on a large scale in the birds and mammals of the Colorado desert and the arid peninsula of Lower California, and in less degree on the open arid plains of the middle region of the continent. (Allen, Bulletin Mus. Comp. Zoöl. Harv. Colleg., Camb., Mass. II. No. 3, p. 341.)

could never understand the nature of the glazed window which lighted up his abode; and many a time I have seen him fly with unabated speed against this, and fall stunned to the floor beneath. This harsh experience I thought must sooner or later teach him more wisdom; but, alas! it did not. One morning on entering the room in which I kept him, I found my pet stretched breathless on the floor immediately beneath the window, where he had evidently fallen after a last and, unfortunately, fatal attempt to reach the outside world.

The chief prey of the Short-eared Owl is insects and field-mice, and he rarely attacks birds, and this only when the former are scarce, namely, during the winter. I have on some occasions met with this bird in unusual numbers in the fields and meadows of Eastern Ontario towards the close of harvest time, when they were very fat. The stomachs of a number which I examined were filled with field-crickets and grasshoppers, and nothing else; but later in the season they appear to feed more upon the field-mice. Some of these birds remain with us very late, and long after the first snow-falls; indeed I have met with them occasionally throughout the winter. These winter visitants, however, are exceptions to the general rule, for the majority of the birds undoubtedly leave us in November for the Middle and Atlantic States, where they remain until we have passed through our long, dreary Canadian winter.

According to Richardson the Short-eared Owl reaches the fur countries as soon as the snow disappears, and departs again in September. They have been met with as far north as latitude 67°, and may even extend further. This same writer also states that they are numerous, and hunt frequently for their prey in the day time. But from what I have seen of this bird I know it to see but poorly in the day light, and instances have come under my notice of individuals being captured by hand.

The nest of this Owl is generally placed on the ground, and consists of dry grass, moss, and feathers placed loosely together. The eggs, however, are often simply laid in a depression in the

ground without any material intervening. These are generally four or five in number, and are of a dull white. Coues says they are "less nearly spherical than usual in this family;" and those I have seen resemble the eggs of a Grouse more than those of an Owl. They could not be mistaken for the eggs of the Long-eared Owl. According to Mr. Hutchins the Short-eared Owl "lays *ten* or *twelve* small, round white eggs;" but this for a bird of prey would be something very extraordinary, and I am more inclined to believe that this observer mistook the eggs of some of the grouse—which likewise nest on the ground—for those of this Owl. At any rate, whatever the bird may have done in Mr. Hutchins' time, it now is content to lay *four* or *five* eggs, in rare instances *six*. These measure on the average about 1½ inches in length by 1¼ in breadth.

Like other Owls, however, the Short-eared Owl varies its mode of nesting to suit circumstances. On the island of Oonalashka Mr. Dahl has found it breeding in *burrows;* he says "the hole is horizontal, and the inner end usually a little higher than the aperture; lined with dry grass and feathers." There are no instances on record of its occupying the nest of other birds, and consequently it is probable that it does not indulge in this habit.

Formerly the Short-eared Owl was conjectured to occur but rarely south of Pennsylvania; but it is now known to be abundant about Washington, D.C., especially in winter. Coues met with it in the salt-marshes of the North Carolina coast at various seasons; and Boardman states that it is quite common about marshes in Florida. According to Dr. Cooper, in California it has not been found south of the Santa Clara Valley.

The Short-eared Owls undoubtedly sometimes congregate in large flocks. Mr. Bewick records an instance of twenty-eight individuals being found in a turnip-field—which Richardson remarks is as extraordinary as Mr. Hutchins' statement respecting its *ten* or *twelve* eggs. But other similar instances are on record. Coues says: "On one occasion I observed a gathering of twenty or thirty individuals on the Colorado River, below Fort Mojave.

Others have noted similar instances of its sociable disposition. The birds were sitting quite closely together in the rank herbage bordering the river; some flapped hurriedly off as the steamboat came abreast of them, while others stood to their perches as we passed." I have myself often met with them in large numbers in Canada, and more particularly — as already mentioned — in the autumn. On some of these occasions the meadows really seemed to swarm with them, but on our approach they betook themselves to the trees. It is probable such gatherings in the autumn are in some way or other connected with their southward migration. This Owl appears to be as abundant on the Pacific as it is on the Atlantic coast, and no differences can be detected in the specimens from these widely separated portions of our continent.

Sp. Char. Ear-tufts very short; entire plumage buff or pale fulvous; every feather on the upper parts with a wide longitudinal stripe of dark brown, which color predominates on the back; under parts paler, frequently nearly white on the abdomen, with longitudinal stripes of brownish-black most numerous on the breast; very narrow and less numerous on the abdomen and flanks; legs and toes usually of a deeper shade of the same color as the abdomen; quills pale reddish fulvous at their bases; brown at their ends, with wide irregular bands and large spots of reddish fulvous; tail pale reddish fulvous, with about five irregular transverse bands of dark brown, which color predominates on the two central feathers; under tail coverts usually nearly white; throat white; eyes enclosed by large spots of brownish-black; ear-tufts brown, edged with fulvous. Bill and claws dark; irides orange-yellow.

Total length—Female, about 15 inches; wing, 12; tail, 6 inches.
" —Male, rather smaller.

Sub-Family SYRNINÆ, Gray Owls.

Char. Head large, with very small and concealed ear-tufts, or entirely without. Facial disc nearly perfect; eyes small for the family of Owls; wings rather short, or not so long as in the preceding; tarsi and toes generally fully feathered.

This group contains some of the largest of the Owls; generally, however, the size is medium, and frequently small. They inhabit extremes of latitude. The plumage is generally lax and soft.

Genus **SYRNIUM,** Savigny.

Gen. Char. Size usually large; head large, without ear-tufts; eyes rather small; bill strong, curved from the base; fourth and fifth quills longest; tail rather long, wide, rounded; legs moderate or rather long; claws long, strong, very sharp; conch of the ear a simple oval cavity only half the height of the cranium.

Species of the genus inhabit principally the northern parts of the world, and are generally characterized by the prevalence of gray or cinereous of various shades in their plumage. There are some fifteen or twenty species altogether, two only of which are met with in Canada.

Syrnium Cinereum *(Gme.)* Aud.

CINEREOUS OWL; GREAT GRAY OWL.

PLATE XXIV.

The Great Gray or Cinereous Owl is the largest and most magnificent of the whole Owl family. On the same Plate with it is figured, by way of contrast, the little Acadian or Saw-whet Owl, the smallest species found in Canada; and the contrast is indeed striking.

I wish to begin my description of this truly grand bird by clearly stating, that although it has been more or less met with every winter in Canada, it is by no means a common species, and certainly not a *resident* one. I invite special attention to this

fact, for the reason that in several of the leading works on our North American ornithology, this species is stated to be "resident in Canada." For instance, only the other day, on taking up the very elaborate and comparatively recent work of Dr. Elliott Coues on the "Birds of the North-West," my eye fell on the following, in his description of the Barred Owl — our next species: "It appears to be somewhat a southerly bird, very abundant in the woods of the South Atlantic and Gulf States; but although common in New England, *is rather sparingly represented in British America, the home of the Great Gray Owl.*" I have myself italicised the latter portion of this quotation, in which few words there are two glaring errors which cannot be too speedily corrected.

And first, the Barred Owl instead of being "rather sparingly represented in British America," is the most abundantly distributed and most frequently met with of the family in Canada during the fall, winter and spring months, retiring during the summer to the more northern portions or to the fur countries to rear its young. Secondly, Canada cannot be said to be "the home of the Great Gray Owl," when this bird is only a rare winter visitant, and is never seen in the summer. Cassin, and other writers of high standing, have made the same mis-statement respecting the latter bird; but in the writings of the first-named author we find the clue to the whole misunderstanding. Cassin makes his statement on the authority of the late Dr. Hall, of Montreal, who, a number of years since, drew out a list, entitled, "The Mammals and birds of the District of Montreal," which was eventually published in our Canadian Naturalist and Geologist.* In this list the Great Gray Owl, Snow Owl, and Hawk Owl are mentioned as resident birds, nesting in the district. This statement, however, must be wholly conjectural, as up to the present year (1876) no naturalist or collector has himself taken, or heard of others having taken, the eggs of either the Snowy or the Cinereous Owl in Canada; and I think the statement will as truly apply to the Hawk Owl. These

* Vol. VII., page 44, *et seq.*

facts show how extremely careful all observers should be, especially in Canada, in making out their local lists of Mammals and Birds, putting nothing down as fact which they have not observed themselves, or plainly stating wherein they have drawn from hearsay or conjecture. While on this subject I may add, that the only species of Owls which are known to nest in Canada, and of which the eggs have been obtained, are the Little Screech Owl, the Great Horned Owl, the Long and Short-eared Owls, and the Barred Owl.

The Cinereous Owl, as already stated, is rather a rare bird throughout the greater portion of Canada—East and West—but a greater number is seen every winter in the Province of Quebec than in Ontario. Reeks does not mention it in his list of Newfoundland birds, although there can be little doubt but that it occurs there. At Quebec and Montreal more specimens have been obtained, perhaps, than at any other points. During the present winter (1876), mild and open as the weather has been, there has been an unusual number of these birds exposed for sale in the Montreal markets, all of which were obtained either on the island or in close proximity to it; this unusual number, however, only amounts in all to about six birds. One pair of these I obtained—a male and female—the latter being the largest I have ever seen. In Canada West this Owl has been taken at Kingston, Toronto and Hamilton, and probably at other points. It is, according to Richardson, "by no means a rare bird in the fur countries, being an inhabitant of all the woody districts lying between Lake Superior and latitudes 67° and 68°, and between Hudson's Bay and the Pacific. It is common on the borders of Great Bear Lake; and there and in the higher parallels of latitude it must pursue its prey, during the summer months, by daylight." It is not mentioned by Mr. Bernard Ross as occurring in the McKenzie River district. From Canada it wanders into the Northern and New England States in winter, and is found as far south as Massachusetts and New Jersey. Dr. Brewer states that about the year 1839 he obtained two for Mr. Audubon that were shot near Boston,—"a fact which does not appear to have

been previously recorded." Another was taken at Salem, Mass. by Mr. E. S. Waters (1866) and is now in the museum of the Peabody Academy. Ridgway records it at Illinois. Dr. Cooper reports it as "common in the dense spruce forests near the Columbia river, and northward."

Respecting the nidification of the Great Gray Owl, and its other general habits, very little is known to naturalists. I consider it to be a strictly boreal bird, breeding in the fur countries and extremely high latitudes. The majority are resident birds in the Arctic regions, and those we see are the few stragglers which perhaps have followed in the track of some of the flights of Ptarmigan.

This Owl is particularly well provided against cold, but not to the same degree as the Snowy Owl. Its plumage is loose, soft, and has a hair-like appearance. The head and face appear to be unusually large, but the skull, when the skin and feathers are removed, is comparatively small. Unlike the majority of the Owl species, the eyes of this bird are unusually small, as are also the feet. There is considerable difference in size between the sexes, but in other respects they are alike. The eggs of most Owls are white, without spots, but according to the list before referred to of Hall's, those of this species are "mottled with blackish brown;" which is most improbable. Can any of our collectors inform us on this point?

SP. CHAR. The largest N[illegible] American Owl. Above smoky or ashy-brown, mottled and barred with ashy-white, with numerous dark ashy-brown stripes, especially on the breast, and with bars of the same on the abdomen, legs and lower tail coverts; quills brown, with about five wide irregular bands of ashy-white; tail similar, with five or six bands, and mottled with dark brown; feathers of the disk on the neck tipped with white; eye nearly encircled by a black spot; radiating feathers round the eye, with regular transverse narrow bars of dark brown and ash-white.

Length, 25.00 to 30.00; extent, 56.00; wing, 18.00; tail, 12.00 to 15.00. Iris yellow. Bill and claws paler.

Syrnium Nebulosum *(Forster.)* Boie.

BARRED OWL; COMMON GRAY OWL.

PLATE XXV.

The two birds so beautifully and accurately figured on this Plate by Notman will at once be recognized by all our Canadian sportsmen and collectors as old camp-fire acquaintances. They are male and female, and were taken on the Nuns' Island, in the St. Lawrence, near the city of Montreal. As this Plate is not my own handiwork, it will not be considered egotistical in me when I state that a more natural, accurate and beautiful portrait of the Barred Owl does not exist in any ornithological work yet published in this country. The birds from which it was taken were in prime condition, or in other words, in perfectly mature plumage, and natural mates. They were preserved and mounted by Mr. Wm. Hunter, late taxidermist to the Montreal Natural History Society, whose skill as a bird-mounter is well known to the citizens of Montreal and Hamilton, in both of which cities he for a number of years resided and collected. The figure of this Owl as given by Audubon in his "Birds of America," is not recognizable—at least as our bird—and must have been taken from a form or stage not known in Canada; this any one may see by comparing the Plates. I believe, however, that the Southern individuals of this species (*e.g.* Florida specimens) are both darker and a shade smaller than Northern New England or Canadian ones.

The Barred Owl, or, as it is more generally known in Canada, the common Gray Owl, has, besides being wretchedly figured, been most incorrectly described by many writers, and I here gladly seize the opportunity of correcting some mis-statements made respecting it. In the comparatively recent work of Dr. Coues, on the "Birds of the North-West," he mentions this Owl as "sparingly represented in British America," and states that "the sexes of this bird are not appreciably different in size, nor otherwise

distinguishable by external characters." Both of these statements are decidedly incorrect. The Barred Owl *is* universally diffused over the greater portion of British America, and is a resident species in most localities in Canada. They have been met with from Hamilton, Ontario, to Nova Scotia and Newfoundland, and extend northward to the fur countries. Mr. McIlwraith in his "List of Hamilton Birds" gives this species as a resident and common bird; and Dr. Bernard Gilpin writes me that in Nova Scotia it is the same. I have met with it myself on many of our geological expeditions in both the Provinces of Ontario and Quebec, and have taken a number of specimens during winter on the island of Montreal. Further, in reply to a letter, Mr. Wm. Couper writes me: "The Barred Owl is the most common species throughout the Canadas, where it breeds. I found the young, in the down, in a wood near the city of Quebec."

These records of the occurrence and residence of the Barred Owl in Canada are more than sufficient to overthrow the above-mentioned rash statement respecting its being "rather sparingly represented." The northern limit of its range, however, does not appear to extend much beyond the southern portions of the fur countries. It was not met with by Richardson on any of his expeditions, but is mentioned in his Fauna Boreali Americana from the circumstance that one specimen taken at Hudson's Bay was, in the year ——, sent by Mr. Graham to the Royal Society. Hutchins does not give it in his remarks on the birds frequenting the mouth of Nelson river; nor is it included in Ross' list of the birds of the McKenzie River district.

As to Coues' statement respecting the sameness of size in the sexes, I can but remark that such is not the general rule in Canada, where the female is considerably the larger bird. Wilson also records this fact, but goes to the other extreme in stating that "the difference of size between the male and female of this Owl is extraordinary, amounting sometimes to nearly eight inches in the length." Thus do hasty naturalists fly from one extreme to another, while the quiet but more accurate observer strikes the

truth midway. Of course in all species there are occasionally extraordinary individuals; but putting these aside, I can safely state that, in the general run of specimens, the female exceeds the male in length and extent by from two to four, rarely five inches. Both sexes, however, are much the same in plumage.

One very remarkable feature in this Owl is the color of the eye, which is wholly bluish black, and not unlike a very large bluish black glass bead. Yet I have seen innumerable stuffed specimens throughout Canada, and even in some public museums gazing fiercely out of their cases with the large orange-yellow colored eyes of the Great Horned Owl. Doubtless such gave more expression to the otherwise modest and meek physiognomy of this bird, but the expression was a most unnatural one, and woefully belied its true character. Where nature is thus ignored in stuffed specimens, these are worse than worthless.

The Barred Owl is often met with during the winter months in Canada, and hunts during the day. It preys at this season largely upon small birds and squirrels, and sometimes frequents the neighborhood of the out-buildings of a farm house, where, besides mice and rats, it may occasionally quietly make off with some poultry or tame pigeons. Its vision is unimpaired by the sun-light, and I have found it an exceedingly difficult matter to get within gun-shot of some of them. Their flight is remarkably noiseless, and one might pass within a few paces of a person without his attention being directed towards it, did its shadow on the white snow not betray it. The Barred Owl seldom makes long flights, but when disturbed or pursued, flits from one bushy tree to another, describing a series of short curves. It is often difficult to tell what part of the tree is reached, as the bird though entering it below the lowermost branches, afterwards suddenly ascends to some of the topmost boughs, where it is not easy to discover it.

In summer these Owls betake themselves to the more heavily wooded sections of the country, and are but seldom seen in the vicinity of our towns and cities. They frequently visit the sur-

veyors' or hunters' camp-fire in the Province of Ontario, and I have known some to be exceedingly venturesome on such occasions. Strange to say, I have not been able to find any authentic account of these birds nesting in Canada, although they undoubtedly do so, being met with at all seasons. The young, however, have often been taken "in the down," proving clearly that their nesting site was not far distant. According to Coues, they breed in March, in the Atlantic and Gulf States; but it would be April before they could do so in Canada. Their nest is sometimes built in the branches of a tree, but more generally the eggs are laid in the hollow of a tree. Occasionally they are said to make use of the nest of a Hawk or a Crow. The eggs are white and subspherical measuring about 2 inches in length by 1⅔ in breadth. They range from five to six in number.

I should have mentioned that this Owl is not known to occur west of the Rocky Mountains,; but Dr. Cooper, in his "Birds of California," remarks: "As it is, however, exceedingly improbable that a bird of such wide range in other parts of North America should not cross the mountains, we introduce it here in anticipation of the period of its detection in the mountains of California, which will undoubtedly occur sooner or later." To the west of the Rocky Mountains, according to Coues, the Barred Owl "is to some extent replaced by the allied but perfectly distinct *S. occidentale*, discovered by Mr. Xants, at Fort Tejon, California, and subsequently observed in Arizona by Lieut. Bendire, United States Army."

SP. CHAR. Much smaller than the Cinereous Owl. Head large, without ear-tufts; tail rather long; upper parts light ashy-brown, frequently tinged with dull yellow, with transverse narrow bands of white, most numerous on the head and neck behind, broader on the back; breast with transverse bands of brown and white; abdomen ashy-white, with longitudinal streaks of brown; tarsi and toes ashy-white, tinged with fulvous, generally without spots, but frequently mottled and banded with dark brown; quills brown, with six or seven transverse bars nearly pure white on the outer webs, and ashy-fulvous on the inner webs; tail light brown, with about five bands of white, generally tinged with reddish-yellow; feathers of disk tipped with white; face ashy-white, with lines of brown, and a spot of black in front of the eye; throat dark brown; claws horn-color. Bill pale yellow; irides bluish black. Sexes alike.

Total length, about 20.00 to 24.00; wing, 13.00 to 14.00; tail, 9.00.
Female invariably larger than the male.—H. G. V.

Messrs. Sclater and Salvin's *S. fulvescens* is the Mexican variety of this species.

Genus **NYCTALE**, Brehm.

Gen. Char. Size small. Head with very small ear-tufts, only seen when erected; eyes small; bill moderate; facial disk nearly perfect; wings rather long; tail short; toes densely feathered; conch of ear very large, with an operculum.

Until quite recently this genus was thought to be represented in North America by some four or five species; these, however, are now reduced to two, both of which are tolerably abundant in Canada. They are of diminutive size, and are the most nocturnal species of the family.

Nyctale Tengmalmi var. Richardsoni *(Bp.)* Ridgw.

SPARROW OWL; RICHARDSON'S OWL.

PLATE XXVI.

This is an exceedingly interesting little Owl, and the Plate herewith presented is a truthful portrait of it. It inhabits Great Britain, the continents of Europe and Asia, northern Africa, and northern North America. In Europe and Britain it is commonly known as Tengmalm's Owl, and throughout Canada and the United States as the Sparrow Owl.

Up to the year 1838 the American bird was considered as unquestionably identical with its European representative, but was subsequently, in common with several species, separated as a distinct species by over-zealous naturalists. Lately, however, and chiefly through the studies of Mr. Ridgway of Washington the birds of the two continents have been again re-united under the name which has priority, namely *N. Tengmalmi*; but the American bird is still supposed to constitute a variety or a distinct *geographical race* which, for convenience, is called *var. Richardsoni*. To my mind, however, as I have elsewhere remarked, such a multiplication of names is much to be regretted, and appears needless—not only respecting this, but many other species which

inhabit alike both continents. For when we come to inquire into the distinctive marks which characterize such varieties, we find these to consist in most cases of little more than a difference in the intensity of coloring; and even this does not appear to be constant in the individuals composing either race. For instance, in the case of the Hawk Owl, *S. ulula* var. *Hudsonia*, which is likewise separated into a European and American race, it has only recently been discovered that it is the American type and not the European which inhabits Great Britain.

The American Sparrow Owl only differs from the *Tengmalmi* of Europe in being *occasionally* darker colored, the habits of both birds, and indeed all other specific details, being unquestionably the same. It is strictly a northern species, ranging with the Hawk and Snowy Owls to, and probably beyond, the highest latitude yet reached by travellers, but stopping far short of these birds in its extension to the southward. It has been met with in Maine, Massachusetts, and Connecticut; but in this last State rarely. I can find no record of it in Pennsylvania or New Jersey, and think it probable that beyond Massachusetts its occurrence is rare and fortuitous. Boardman gives it as resident in Maine; and Downs as common in Newfoundland. In Canada it is pretty universally diffused as far west as Hamilton, Ontario, where, however, it is said by McIlwraith to be a rare winter visitor. Mr. Wm. Couper, naturalist, informs me it is particularly abundant to the northward of the city of Quebec, in fact more so than in any other part of Canada; and I have myself met with it in the vicinity of Montreal every winter for a number of years. This winter (1876) there have been an unusual number of occurrences of this species as well as of several other usually rare Owls about Montréal. Dr. Bernard Gilpin writing from Halifax, N.S., says that the Sparrow Owl is a rare winter visitor in that Province; but as its habits are very retiring and strictly nocturnal, it is possible that though but few are seen the bird may be tolerably abundant. According to Richardson this Owl is very abundant in the region of the Saskatchewan, and its plaintiff cry may be heard throughout the night from every quarter. The Cree Indians call it the

"Death Bird," and have a curious custom of answering its cry by a whistle, which if not replied to by the bird, is thought to bespeak the early death of one of the number. In the McKenzie River district Ross says it is found north to Fort Simpson, but is "rather rare."

There is no record of the Sparrow Owl breeding in Canada, but that it does so I am persuaded. We have yet much to learn respecting the habits and nidification of most of our Owls; but this investigation will ever be attended with difficulty until more interest is awakened in the general community in their behalf. When it is yet uncertain whether the species most commonly met with nest in any part of our Dominion, what can we expect to learn of those whose habits keep them aloof from observation—as is the case with the birds of the present genus.

The food of the Sparrow Owl is mice and small birds, and in summer largely insects. It is said to build its nest in a pine tree, and use in the construction of this, sticks, grass, and feathers. The egg, like that of other Owls, is colorless, and measures 1¼ inches in length, by 1 inch in breadth.

There is considerable difference in size between the male and female of this species—though this fact has not been noticed as yet by any writer. This winter (1876) I had the good fortune to obtain three females and two males, and found that the former measured from 1¾ to 2 inches in excess of the latter in length, and close upon the same figures in expanse.

The theory advanced some time since in the "Ibis" by Mr. Elliot, giving the *S. albifrons*, White-fronted Owl or Kirtland's Owl, as the young of the present species, is hardly worth our consideration, as it will not be for one instant regarded by any of our *field-men* in Canada, most of whom have long ere this ascertained that the so-called *S. Kirtlandii* is simply a peculiar form of the Saw-whet or Acadian Owl.

The birds represented on Plate XXVI are male and female. They were shot close to the city of Montreal.

Sp. Char. The largest of this genus. Wings long. Upper parts pale reddish-brown tinged with olive, and with partially concealed spots of white, most numerous on the head and neck behind, scapulars and rump; head in front with numerous spots of white; face white, with a spot of black in front of the eye; throat with brown stripes; under parts ashy-white, with longitudinal stripes of pale reddish-brown; legs and toes pale yellowish, nearly white, sometimes barred and spotted with brown; quills brown, with small spots of white on their outer edges and large spots of the same on their inner webs; tail brown, every feather with about ten pairs of white spots.

Bill, a yellowish white on the ridge and at the tip; dark-colored on the sides (never all yellow, as often described); irides orange and sometimes lemon-yellow.

Dimensions variable. Length, from 10½ to 12 inches; wing, 7 to 8; tail, 3½ to 4½ inches.

Several of these Owls have been caught alive on the island of Montreal this winter (1876).

Nyctale Acadica *(Gmelin.)* BONAP.

NYCTALE ALBIFRONS, CASSIN. } *Immatare.*
NYCTALE KIRTLANDII, HOY. }

ACADIAN OWL; SAW-WHET OWL; LITTLE OWL.

PLATE XXVII.

Also known in its immature stages as the "White-fronted" and "Kirtland's" Owl; and to our French people as "*la chouette.*" Perhaps it is most commonly known as the "Little Owl," for it is decidedly the smallest species of the family in North America.

The Acadian Owl—for this is its proper name—resembles somewhat in its general color the Sparrow Owl. It is, however, a very much smaller bird, differs in the relative lengths of its wings and tail, in its cere and nostrils, and has a black instead of a yellow bill. Nor is it so boreal a species as the Sparrow Owl, having as yet been but seldom met with in the fur countries, and never in any very high degree of latitude. It is given and described in Fauna Boreali Americana by Rich. and Swains., but only from a single specimen taken on Thompson's River, New Caledonia, to the westward of the Rocky Mountains. Richardson's description of it is largely borrowed from Wilson, as he states it was not met with by "the Expedition." It, however, is met with abundantly throughout Canada from one extremity to the other; and it probably extends into the southern portions of the fur countries. It is of rather frequent occurrence in the Northern and New England States, and has been further traced a long way into Mexico; but this southward extension, as Coues remarks, "appears to be mainly along wooded mountain ranges, the altitude of which compensates, in a faunal sense, for the decrease in latitude." From what I can gather from the published local lists of American naturalists, this Owl has but seldom been met with to the southward of Pennsylvania, and it is not given by Allen or

Boardman as a Florida species. It, however, extends across the continent from ocean to ocean; consequently its habitat may be given as the whole of the temperate parts of North America.

Audubon found the Acadian Owl in Maryland, and describes the eggs as being deposited in Crows' nests or holes in trees; these numbered from three to six; were elliptical and white.

Wilson says but little of the Acadian Owl, and my impression, after reading his short description, is that he personally met with but few individuals of this species. He describes it as the "Little Owl" (*Strix passerina*, Linné), says it is met with as far north as Nova Scotia, and even Hudson's Bay, that it is frequent in Russia, and describes its nest, containing two white eggs, as constructed half-way up a pine tree. His description of the bird is taken from a single specimen—a female—shot at Great Egg Harbor, in New Jersey.

In Canada, however, where the Acadian Owl is particularly abundant at all seasons of the year, we learn further particulars concerning it, and are enabled to correct a number of mis-statements made respecting it. The two individuals figured on the accompanying Plate were selected as average representative specimens of this Owl from out of twenty-five, all of which were taken in Canada; and had I required, I could have procured at least as many more. A third individual, evidently an old bird, in splendid typical plumage, was received after the above two were photographed, and is figured on Plate XXIV along with the Great Gray or Cinereous Owl.

As illustrative of the frequency of occurrence of the Acadian Owl in Canada, I may give the following. Mr. McIlwraith of Hamilton writes me that he has had this Owl living and dead by the dozen; Mr. Passmore has taken numerous specimens in both Toronto and Montreal; the late Mr. Wm. Hunter, of the Montreal Nat. Hist. Soc., had specimens from both Hamilton and Montreal; Mr. Wm. Couper, from Montreal and Quebec. Dr. Bernard Gilpin says it is common around Halifax, N.S.; and I have a

number of records of its occurrence in Newfoundland. My own collections show it to be of frequent occurrence through the counties of Hastings, Addington, Frontenac, Lanark and Renfrew in the Province of Ontario; in the region to the northward of the Ottawa river, along the valleys of the Gatineau, Lievre, and Rouge rivers; throughout the District of Montreal; and in the Eastern townships—in the mountainous region bordering on the State of New York. In all these sections of country it undoubtedly breeds; but, strange to say, its nest and eggs were not found by us on any of our expeditions, nor have I yet met with one person who has been more fortunate in this respect. So small, however, is this bird, and so nocturnal is it in its habits, that I can readily conceive of its being abundant and perhaps breeding in our midst without our being cognizant of the fact. The eggs are said to be pure white, subspherical, and of crystalline clearness. They measure 1⅛ inches by 1⅞ inches.

The food of this interesting little Owl consists almost entirely of insects, and it is very fond of some of the large moths which are on the wing during the twilight. It is to some extent a resident species in Canada, and as its plumage is evidently designed to fit it for extreme cold, it is probable that numbers remain throughout the winter in the fur countries. According to Dr. Gilpin it is common and breeds in Nova Scotia. Reeks also describes it as common in Newfoundland.

The little tawny Owl occasionally met with in Canada of about the same size as the Acadian Owl, and pretty general known as Kirtland's Owl, is now considered by good authorities to be simply the young or immature form of that first mentioned; but so rarely does it occur, and so few have been the specimens at at our disposal for study and comparison, that I do not think the question is yet satisfactorily determined. If this *tawny* form is in truth the young of the Acadian or Saw-whet Owl, it is another of those puzzling instances in which, while the mature birds are plentiful, the young and immature are but rarely met with. We have already seen a parallel to this in the case of the *red* and *gray*

stages of the Screech or Mottled Owl, and remarked that among these the *red* were perhaps in the proportion of one to fifty. In the present instance the small proportion of *tawny* to the ordinary found plumage is much more remarkable, and may be given as but one in a thousand. Are we, then, really to believe that, while we have such numerous occurrences of typical Acadian Owls, or in other words, of undoubtedly mature birds, we have only occasional accidental occurrence of the young and immature form? We can hardly conceive of such a case, unless indeed it could be demonstrated that these young birds remained by themselves in some out-of-the-way breeding resort until they had attained their mature plumage—save, perchance, a stray individual or two which happened to migrate with the older birds into our borders. On the other hand, supposing the *tawny* form (Kirtland's Owl) to be a distinct and valid species, we have still to contend with the fact of its universal rarity, which again suggests an idea of improbability, for we can hardly at the present day conceive of a valid species being so rare as that only some dozen specimens of it have—all told—been taken. Surely somewhere such a species must be represented by a greater number of individuals, or it must be on the verge of extinction. In this last case, however, we should naturally expect to find in the records of the past some notice of its era; but such is not the case respecting Kirtland's Owl. Indeed most of the specimens we know anything about have been taken within the last twenty or twenty-five years, and the larger number of these in Canada. One other view of this question may be taken, and by me it seems by far the most reasonable one, namely, that connected with the melanism or melanotic condition peculiar to several species of both the *Falconidæ* and *Strigidæ*. This would at once seem to give all the explanation necessary, for we know that such melanism would affect only an occasional individual of the species,—under, perhaps, peculiar circumstances,—and hence the very few occurrences of the *tawny* form known as Kirtland's Owl. As I have already stated, however, the whole question is yet involved in much uncertainty, and until further facts and specimens have been collected, it cannot be explained satisfactorily.

There is one circumstance connected with the occurrence of the Acadian Owl (ordinary form) in Canada which should here be mentioned, as it has an important bearing on this question. It is the fact that in a series of some fifty specimens I have examined there are great diversities in the intensity and general plan of the colors of the plumage. This is evidently the partial effects of both season and age; yet none of these individuals approach in the slightest to the Kirtland Owl form. Surely in such an extensive series of birds taken at all seasons during a number of years we might naturally expect one, two, or even more Kirtland's Owls, if these are — as is now generally believed — the young of this species.

The first instance of a capture of the rare little Kirtland Owl that came under my notice was in the year 1862, in Montreal. The bird was in the possession of Mr. Wm. Hunter, of the Montreal Nat. Hist. Society, who stated that some few years previous (to 1862) he had caught it alive in one of the grain stores situated on the Lachine Canal, not far from the city. On referring to Audubon's "Birds of America," we could find no notice of such a species; but Mr. Hunter informed me that he thought he had identified his bird from a plate in Cassin's "Birds of California, Texas, etc., etc.,"—a work which I had not seen. We turned up this work and carefully compared the plate and description of the Kirtland Owl with our Canadian specimen, when I was satisfied that Mr. Hunter had not been mistaken. This specimen was therefore labelled Kirtland's Owl, and the species was added to our local lists.

The only other specimens which were then known anything about were those—four in number—mentioned in Cassin's work as having been discovered and first described by Dr. Hoy from the neighborhood of Racine, in the State of Wisconsin. Shortly after this, Dr. Archibald Hall in his "Mammals and Birds of the District of Montreal," described this specimen of Mr. Hunter's, alluded to Mr. Hoy's Racine specimens, and adds, "I am happy to have had it in my power to add it to the list of Owls." Mr.

Hunter's specimen formed one of a large case of stuffed birds, which was subsequently sold to a Mr. Thompson, of Montreal, in whose possession it remained for some years. Upon the decease of this gentleman his collection was sold and separated, and as far as I can learn, the case containing the little Kirtland's Owl went out of our city. More recently a second specimen of this rare Owl was obtained—whence I cannot ascertain—and is now in our Montreal Museum of Natural History. These two specimens are the only ones to my knowledge taken in the vicinity of Montreal.

The following notices of the occurrence of this rare Owl in Canada, contributed by Mr. Thos. McIlwraith of Hamilton to an American journal will be read with interest in this connection, and in these I think I can detect a page further in the history of Mr. Hunter's specimen, just referred to. This gentleman, under date of Hamilton, January 20th, 1873, writes as follows :

"In looking over the Naturalist (American) of April, 1871, I observe a notice of the capture of a specimen of the White-fronted Owl in Maine, and the writer of the note, Prof. A. E. Verril, says that the only other instance of its occurrence in the United States, of which he is aware, is the specimen taken by Dr. Hoy at Racine. I am a little surprised at this, for, though not coming much in contact with collectors, I have seen or heard of this (supposed) species now and then for a number of years back. My first knowledge of it was from Cassin's account, and the figure given of it in his 'Birds of America.' Shortly afterward I recognized it in a small case in the possession of the Rev. Professor Ingles, now of the Dutch Reformed Church, Brooklyn, New York, where it was called 'Saw-whet—young.' *The case was brought from Montreal.* I next met it in Toronto, where Mr. Passmore, taxidermist, had two specimens, one of which I obtained, and have now in my collection. Again I heard from Mr. P. H. Gibbs, of Guelph, that there were several about his evergreens near the house, one of which he shot. About the same time Mr. Booth, naturalist, of Drummondville, told me of a specimen he had obtained. Dr. Anderson of Point Levi, opposite Quebec, had his alive for a time; and I heard of still another in the hands of R. K. Winslow, Esq., of Cleveland, Ohio. From the foregoing it would seem to be more common in Canada than it is further south. The opinion seems to be generally held by those with whom I have conversed on the subject, that it is the young of the Saw-whet; and yet it is somewhat singular that it is not as often met with as its supposed parents. In the month of October, a few years since, I had six in Saw-whet form brought me by a lad, who got them all near the same place on his father's farm. The theory recently

advanced by Mr. Elliott, in the 'Ibis,' of its being the young of the Sparrow Owl *(Nyctale Tengmalmi)* I don't think at all probable; I have the two side by side and cannot observe any resemblance to warrant such a conclusion, the difference in size alone being sufficient to show the distinction. My own opinion is that it will be found to be the young of the Saw-whet; but is it not possible that they do not all assume the same garb—that there may be here a freak of nature, so to speak, such as there is in the case of the Screech Owl, where we find both red and gray."

One of the specimens of the Kirtland Owl referred to in the foregoing notes is distinctly said to form one in a case of birds which came from Montreal. This is undoubtedly the one I have already described as being in Mr. Hunter's and afterwards in Mr. Thompson's collection.

Mr. Anderson's specimen, also alluded to in Mr. McIlwraith's notes, I have seen. It is undoubtedly the *N. Kirtlandii* of Hoy and Cassin, and is a very fine specimen. In general appearance it is very unlike the Acadian or Saw-whet Owl, and indeed has hardly one feature in common with this. This bird was kindly lent me by Mr. Anderson for the present work, but as I had previous to its arrival arranged my book for 30 Plates only, I was obliged to omit it for the present.

In Canada, besides the Acadian and Kirtland Owl forms, we occasionally hear of another,—the Dalhousie Owl *(S. Dalhousei*, Hall). Several specimens of this variety have been taken in the vicinity of Montreal, but I can detect no difference between them and a number of my specimens which I know to be *N. Acadica*. In describing the *S. Dalhousei*, Dr. Hall says: "The whole appearance very much resembling the former species *(Acadica)*." He adds, "The spots on the inner vanes of the primaries, however, differing from those on the *S. Acadica* in being oval, and scarcely presenting the appearance of bars." And further, in describing the ventral aspect of *Dalhousei*, he says: "Breast and belly streaked with reddish brown and white, instead of being wholly brown, as in the former *(Acadica)*." I have seen few specimens of the *N. Acadica* in which the breast and belly were wholly brown; and further, have found the spots on the inner vanes of the primaries altogether too irregular a character-

istic to be in any way guided by. There consequently does not appear to be the slightest grounds for making a distinct species of the occasional form *Dalhousei*.

For the purpose of comparison I append descriptions of both the typical Acadian Owl and that heretofore regarded as Kirtland's Owl, simply remarking that concerning the last I can myself yet come to no satisfactory conclusion.

N. Acadica.

Sp. Char. Small. Wings long; tail short. Upper parts reddish brown, tinged with olive; head in front with fine lines of white, and on the back, rump, and scapulars, with large partially concealed spots of white; face ashy-white; throat white; under parts ashy-white, with longitudinal stripes of pale reddish-brown; under coverts of wings and tail white; quills brown, with small spots of white on their outer edges, and large spots of the same on their inner webs; tail brown, every feather with about three pairs of spots of white.

Bill and claws dark; irides yellow.

Total length, 7½ to 10 inches; wing, 5½ to 6; tail, 2¾ to 3 inches.

N. Kirtlandii, Hoy, (Cassin.)

Sp. Char. *Dorsal aspect.* Prevailing tint, chocolate brown, relieved on the scapulars, secondaries, and primaries by whitish spots, on the latter the spots existing on both the outer and inner veins, forming three or four imperfect bars; tail with three bars of white and faintly tipped with the same color.

Ventral aspect. Chin and throat chocolate-brown, changing on the abdomen, flanks and inferior tail coverts to an ochrey color; under wing coverts whitish.

Bill black and nearly concealed by small feathers arising from its base; irides yellow; above eyes and on each side of the bill a dirty white line, remainder of the front composed of chocolate-brown feathers, edged with dirty white, their tips causing at the edge of the front a dirty white line; feathers behind eyes darkest; tarsi feathered to extremities of toes with appressed ochrey-colored feathers; toes and claws long.

Third primary longest, second and fourth subequal, first and seventh being about equal; wings rounded when expanded; length from crown of head to tip of tail, 7¼ inches; alar expanse, 15 inches. The whole plumage is peculiarly velvety to the feel.—(Hall.)

Sub-Family NYCTEININÆ, The Day Owls.

Char. General form compact and robust. Head moderate, without ear-tufts; wings and tail rather long; tarsi strong, which, with the toes, are more densely covered than in any other division of this family.

This division embraces two species only, which inhabit the Arctic regions of both continents, the majority of the individuals migrating southward in the winter.

Genus **NYCTEA**, Stephens.

Gen. Char. Large; head rather large, without ear-tufts; no facial disk; legs rather short, and with long hair-like feathers, nearly concealing the claws. Bill short, nearly concealed by projecting feathers, very strong; wings long; tail moderate, or rather long, wide; claws strong, fully curved.

Only one species of this genus is known, occurring in the north of both hemispheres. In America during winter it migrates southward almost to the Gulf of Mexico. Some, however, remain all the year round in the fur countries.

Nyctea Scandiaca *(Linn.)* Newt.

NYCTEA NIVEA, Gray.

SNOWY OWL; WHITE OWL.

PLATES XXVIII & XXIX.

Were we required to single out from amongst our birds one that might be said to be emblematic of a bright, clear, sharp Canadian winter—not that of 1875-'76—we could not select any more appropriate than the beautiful Snowy Owl of northern North America. His snow-clad plumage recalls to our memories many a brilliant, biting day, and many a storm experienced far from the haunts of civilization in the interminable wild snowy wastes of Canada. Even during the heat of mid-summer, a glance at our case of stuffed Snowy Owls is sufficient to cause a feeling of relief and refreshment in the same manner as the sight of a collection of green, fresh-growing plants in winter reminds us of a by-gone and approaching summer.

This handsome bird—the *Wapow-keetho*, or *Wapohoo*, of the Cree Indians, and the *Oopeeguak* of the Esquimaux—is rather common with us between the months of November and April, or from autumn to spring, being very rarely and only accidentally met with during the summer months. It is of frequent occurrence in the Province of Ontario, but a much larger number of specimens are taken yearly in the neighborhoods of Montreal and Quebec perhaps than elsewhere. I have a number of these Owls in my stuffed collection and a number more packed away as skins for future study and comparison, all of which were killed within a very short distance of the first-mentioned of these cities. Nor must I forget one more—a beautiful living bird which I was so fortunate as to procure this winter (1876) from a *habitant* who, by some means or other, had captured without in any way injuring it.

Of my stuffed birds, one in particular is an old male, a hero evidently of many winters. His plumage is almost spotless white; his bill and claws are blunted and very much worn; and his body, when I removed his skin, was remarkably muscular and tough. Another specimen is of considerably larger proportions, and a female. Her plumage is thickly barred or banded with gray, except the chin, throat, and sides of neck, which are of the purest white, this being so distributed as to give the appearance of a rounded apron. Other specimens, doubtless immature birds of both sexes, are of varied markings, the white ground color being variously relieved by spots and bars of brown and gray. A pure white Snowy Owl is of comparatively rare occurrence; this plumage, according to most writers, being only attained by very old birds. Sir John Richardson, however, judging from the size of some of these *white* Owls met with by the expedition, thought differently, and inferred that the old birds of both sexes frequently became *white*. Be this as it may it is a point of very little importance; but it is my opinion that the unspotted form of plumage belongs only to the males, and this occasionally to young as well as old birds. Females seem to be of much more frequent occurrence than males in Canada, the last occurring perhaps in the proportion of one in ten or fifteen birds, which circumstance

makes it appear probable that the majority of this sex are resident in the Arctic regions.

The Snowy Owl abounds throughout the whole year in the fur countries, and penetrates far into the Arctic circle, having been observed at the highest northern latitude yet attained by voyagers. From these northern parts it is often driven by the severity of the weather or scarcity of food, and visits many portions of Canada and the northern United States, wandering occasionally even to the borders of Florida. On such migrations it is invariably accompanied by flocks of White Grouse or Ptarmigan, and it has been observed that when either or both of these birds have been unusually abundant around Montreal or Quebec, the winter has been more than ordinarily severe to the northward. During the latter part of December, 1875, and in the midst of singularly mild and rainy weather, a severe Polar wave swept over the greater part of the Provinces of Quebec and Ontario, closing up our rivers and causing the thermometer to register between 20° and 28° below zero for five days. With this arrived large flocks of Ptarmigan, hundreds of which were exposed for sale in our markets and groceries; a number of Snowy Owls; a few Great Gray Cinereous Owls, Bohemian Chatterers or Wax-wings, and Pine Linnets. The Snowy Owls were brought into the markets by the *habitants* who had shot them, and during one week I examined upwards of a dozen of these birds, the majority of which were females. The cold snap leaving us as suddenly as it had arrived, was followed, on Christmas and New Year's day, by open spring-like weather with heavy rains, and the Owls and Ptarmigans disappeared. It has always seemed unaccountable to me that the Snowy Owl should be at all influenced by the cold. His plumage is wonderfully adapted for the most inclement weather we can conceive of, being thick, elastic and closely matted or interwoven. Any one who has ever attempted to skin one of these birds will without hesitation bear me out in this statement. It seems an endless task to get beyond the feathers; and even when we have succeeded in parting the outer and inner portions of the plumage, we still find a thick matting of white down, which has to

be plucked off before the skin is finally exposed. Again, when we remove the skin, we find the whole body encased in a thick coating of yellow fat, so that, as I have just stated, it is difficult to conceive of any cold severe enough to penetrate such a covering. Still further, when we look at this bird as he sits motionless, looking like a lump of snow on the limb of some tree, we observe that the only uncovered or bare portions of his body are the great staring yellow eyes, the point of the beak, and the very extremities of the hooked claws, none of which can be sensible to cold. Consequently it is more natural to attribute the southward migrations of these birds to scarcity of food in the more northern regions, this scarcity, being unquestionably caused by extreme weather, which obliges the grouse and other creatures upon which this Owl preys to seek more temperate quarters. In the track of these the Snowy Owl follows, and often himself falls a prey to the gun of the hunter and figures in our markets.

The Snowy Owl hunts during the day and twilight, and in this respect resembles the Hawk Owl. "Indeed unless it could do so," says Richardson, "it would be unfit to pass the summer within the Arctic circle." On the "Barren grounds" in these northern parts it squats on the ground, and is said to be very wary and difficult of approach. This squatting on the ground does not seem to be so much from the force of circumstance as natural inclination and habit, for I have again and again surprised this Owl on the Nuns' Island, near Montreal, on a snow bank, and on the ice of the St. Lawrence, on the borders of this island. When discovered the bird at once betook itself to some distant tree, and became exceedingly wary, not permitting me again to reach within anything like gun-shot of it. As an instance of its powers of sight by day, I may mention the following: A gentleman residing some years since in Montreal, who was a great observer of our winter birds, was in the habit of making frequent excursions across the ice to Nuns' Island. On several occasions he observed a Snowy Owl perched on one of the trees adjoining the out-buildings connected with the "Priests' Farm," but all attempts to come within gun-shot of the bird proved unavailing. Thinking that

the color of his garments might be the obstacle to his success, he, on a subsequent occasion, shrouded himself wholly in white linen, and repaired to the same spot. There sat the Owl in pretty much the same position as when it had been before observed, but as wary as ever, and evidently even already engaged in considering the nature of the white object approaching him. The attempt was unsuccessful, and the hunter returned to town without his prize, but with a considerable addendum to his knowledge respecting the powers of vision of the Snowy Owl.

When the Snowy Owl is winged and otherwise wounded and brought to bay, he makes a desperate resistance, and uses his bill and claws with terrible effect; and I have seen a dog most grievously torn, and almost entirely disabled, which had incautiously attempted to retrieve one of these wounded birds. I have never seen the Snowy Owl snap his mandibles together as most of the other Owls do when molested, and am satisfied he never does so; but with head thrown back, mouth open, and head-feathers closely compressed, he watches every movement of his tormentor, and cannot be surprised by the most cunningly devised feint. The only sound made by the bird while thus pressed is a repeated hissing, like that made by Eagles and the Great Horned Owl; and occasionally I have heard him scream like an Eagle when he has been finally secured and powerless.

The living Snowy Owl in my possession was caught in a trap of some kind on the island of Montreal, but, as I have just stated, without being injured in the slightest. It is a beautiful adult full-grown female, and thus far has thriven well, tamed very considerably, and is fast becoming reconciled to her imprisonment. Her abode is a large cellar, moderately light, and always cool, and from one corner of this to the other she roams as she sees fit. Her usual and apparently natural habit is to squat for hours at a time on the floor, and although there are numerous objects around her on which she might perch, were she so disposed, she has not yet done so, except when suddenly alarmed. Her food consists of raw meat of any kind, which is cut up into long strips

and handed her, and these she *bolts*, I may say literally by the yard. Occasionally I have tried her with cooked meat, but though she eats this, she plainly shows by her manner that she is disappointed. Contrary to the statements made by many writers, she is very fond of water, and drinks it in large quantities. I have seen her empty a pan holding at least three quarts at one time. When she has satisfied herself, if there is any water left, she uses this for washing, employing her bill much in the same manner as a duck, picking out and carefully arranging the upper parts of her plumage. Indeed there is nothing tries her so much as want of water, and when occasionally she has been neglected in this respect for an unusual time, she makes her way to the kitchen and examines tubs, pails, and pans of all descriptions, in which she knows the water is sometimes brought to her. Recently this bird has permitted me to stroke her head-feathers, and appears to enjoy the sensation, sitting quietly with her eyes closed. But this quiet is often deceptive, for sometimes, when I least expect it, she makes a sudden and fierce snap at my fingers. For this amiable return I always reward her with a sound cuff, which sends her sprawling on the cellar floor, and having now received several of these reminders, she has become much less treacherous.

I have been much struck with the likeness of my living bird in general attitude and manners to the Eagle, and her shrill cry is not what one would expect to hear from an Owl. This cry is sometimes a shrill, querulous whistle, and occasionally a loud piercing scream, not unlike that of the Osprey or Bald Eagle. Fresh fish are her delight, and either frozen or thawed she makes short work with them. Audubon graphically describes the piscatorial exploits of the Snowy Owl, and I can readily conceive the eagerness with which he must pursue this pastime.

The Snowy Owl preys upon Grouse, Rabbits, Squirrels and small birds, and when he comes within the borders of civilization, often regales himself upon tame pigeons and poultry. Rats he does not seem to care about—at least judging from the living bird, which, though constantly surrounded by these vermin in its

cellar by day and night, yet never attempts to injure one. In fact my Owl is fast friends with the rats which inhabit the cellar with her, and on several occasions I have seen the meat carried off from under her very claws by these hungry creatures without any demonstration of anger on her part. The Snowy Owl is said to feed occasionally upon carrion; but this, to my mind, has not been satisfactorily proved. This fact was, perhaps, first recorded of this species by Mr. Hutchins, and has since been re-echoed by other writers without further proof. I am inclined to consider the Snowy Owl as being a particularly *nice* bird as regards his eating —as he most assuredly is with regard to the cleanliness of his plumage and surroundings when in captivity. Hunger, however, may cause him to deviate from his usual rule.

Since penning the immediately preceding lines a circumstance has occurred which exemplifies the fierceness and voracity which may be created by hunger. It is this. I had recently procured a beautiful living specimen of the Short-eared Owl, which was captured in a barn near Longueuil, Montreal, and thinking that Owl would surely agree with Owl, I without hesitation let loose this new capture in the same cellar in which my Snowy Owl was confined. Hardly had the poor little creature touched the ground ere, with a plunge, the Snowy Owl was upon it, and with one grasp of her fearful claws, had extinguished its life. She at once commenced to devour her victim, and although I seized the murderer and raised her aloft by her wings, she still retained her fearful grasp of her quivering prey, and continued to make desperate efforts to tear it. I eventually succeeded in forcing her to loosen her hold and secured the poor bird, but too late to save its life. On finding her prey gone her fury knew no bounds, and she followed me to the door of the room with dilated eyes and most threatening gestures.

The Snowy Owl is common in Newfoundland, and is thought to remain there throughout the year, although it is very rarely seen during the summer months. In a paper by Henry Reeks, published in the "Zoologist" (London, England) for 1869, and subsequently reprinted in our Canadian Naturalist and Geologist

(New Series, Vol. V, pp. 38 *et seq.*) some very interesting traits in the character of this bird, as observed in Newfoundland, are recorded, and as these are from actual observation and exemplify its character truthfully, I extract the following :

"The 'White Owl,' as the settlers term this species, is a bold, rapacious bird, and not easily driven from its slaughtered prey. One of the specimens which I obtained at Cow Head was feeding on an eider duck—probably a wounded bird which it had killed—and was twice knocked over with stones, the last time apparently killed, before it would relinquish the duck ; it had, however, sufficient life and strength to force its claws into the arm of the man who picked it up, although protected with all the clothes he usually wore. A large Newfoundland dog, used for retrieving seals, etc., refused to go near the bird after it was knocked down with stones. The men who were present assured me that the bird kept making a 'hissing' noise, apparently at the sight of the dog.

During my residence in Newfoundland I heard amusing anecdotes of the Snowy Owl, but, although I can vouch for the truth of them, it is scarcely necessary to reproduce them all in the pages of the 'Zoologist ;' I will, however, relate one or two which I do not think have before appeared in print. William Youngs, of Codry (Newfoundland), having continually had the bait stolen from one of his fox traps, determined to watch the trap and shoot the robber ; for this purpose he selected a fine moonlight night, with snow on the ground, and, with his gun in his hand, a white swan-skin frock on, and a white handkerchief tied round his cap, he secreted himself in a small bush about twenty yards from his trap, fully determined to shoot the first comer ; but his determination proved fruitless, for a large white Owl—probably the thief—seeing something white sticking up through the centre of the bush, and evidently mistaking it for a fine plump Willow-grouse, instantly made a 'stoop,' and at the same time sending its claws almost to the man's brains, suddenly disappeared with the cap and white handkerchief. The man was so startled for the moment that he was unable to shoot at the bird.

The Snowy Owl is a frequent attendant—although generally unnoticed—of the sportsman, and often succeeds in carrying off a grouse or duck before the retriever gets to it. On one occasion some men were waiting in ice 'gazes' for the purpose of shooting wild geese (*B. Canadensis* and *B. brenta*), when one of them, named James Carter, left his 'gaze' to go and have a chat with his neighbor, incautiously leaving his new white cuffs and gun behind him. He had scarcely left his 'gaze' when an unseen enemy, in the shape of a fine Snowy Owl, pounced in and succeeded in getting clear off again with both of his white cuffs. . . . A good many Snowy Owls are annually caught in the fox-traps of the settlers ; and when very fat, which they frequently are, are considered good eating by many, and I see no reason why they should not be so, but I could never sufficiently overcome my repugnance to birds of prey as food to taste one. None of the settlers

appeared to know anything of the breeding of this bird, although Mr. Downs states that it 'breeds in Newfoundland.' Mr. Cordeaux has kindly examined parasites of *Nyctea nivea* from Newfoundland, and informs me that they are identical with others from European specimens."

These anecdotes and facts are new and instructive, and as this paper of Mr. Reeks' has been seen by comparatively few in Canada, I have thought well to reproduce this portion of it. It will be observed that the hunters of Newfoundland speak of the "hissing" noise made by this Owl—a fact I have myself already mentioned—and do not speak of the snapping of the mandibles. I am inclined to believe that in this respect the Snowy Owl differs from its confreres the Great Horned Owl, Cinereous Owl, and Barred Owl, all of which species when brought to bay snap their mandibles loudly. According to *Temminck*, the Snowy Owl sometimes visits the north of Germany, and is casually seen in Holland. In Europe it is known to frequent the Shetland Islands, and is occasionally caught in summer on the moors of the Orkneys. In Sweden, according to Farrell, the name of *Harfang* has been given to this species, which is derived from its habit of feeding on hares. Mudie says "it very rarely comes to the Mainland of Britain, and when it does it is always during violent snow-storms from the north, which also bring the northern birds not generally visitants of our shores."

The habits of the Snowy Owl during the breeding season, such as the construction of its nest, periods of incubation, etc., do not appear to be well known. Its nest, however, has been found on the ground, and it is said to lay from two to four white, circular eggs, two of which only are hatched. As this Owl undoubtedly lives much on the ground and rocks, it is probable it never builds a nest in trees.

In Canada I have as yet found no authentic account of its nesting, although it has been mentioned as a resident bird here by Cassin, Baird, Coues, and other American writers, all of whom have probably based their statements on Hall's very erroneous list of our Mammals and Birds. Mr. Wm. Couper, however, informs me that the Snowy Owl is a summer resident on the

plains north of the Godbout river, north shore of the St. Lawrence, where it is said to breed. It has been also observed by Dr. Bernard Gilpin in the month of August (1854) on Sable Island, sitting watching rabbit burrows in the hot sand; but Mr. Gilpin adds that he knows that they do not breed there. So few, then, are the authentic instances of the occurrence of this Owl in Canada during the summer months that for the present we cannot regard it as a resident bird, and as I have stated above, there is no record of its nest or eggs having yet been found within our borders.

Sp. Char. *Dorsal aspect.* Facial disc white; head, neck, and whole dorsal region, pure white, with more or less distinct umber brown, in some instances blackish bars; rump and tail coverts white; primaries and secondaries white, with bars on the vanes of the former, and black spots on the inner webs of the latter.

Ventral aspect. Throat, vent, tail coverts, wing linings, and tail, white; breast and belly white, and like the back, variously barred.

Nostrils large and oval, obliquely situated at the margin of the cere; femorals as long as the tarsi; tarsus feathered to the talons, the feathers here being long and soiled; claws black, long, curved, and very sharp; plumage of the legs and toes pure snowy white.

Bill and claws bluish-black; irides bright yellow.

Total length, 24.00 to 27.00; wing, 16.00 to 17.00; tail, about 10.00.

The female is invariably larger than the male, and more regularly barred. Occasionally the old males are nearly altogether pure white.

Genus **SURNIA**, Dumeril.

Gen. Char. General form rather long, but robust; size medium; head moderate, without ear-tufts; facial disk obsolete. Bill moderate, curved from the base, covered with projecting plumes; wings long; tail long, wide graduated; legs rather short, and with the toes densely feathered.

This genus contains one species only which inhabits the northern regions of both continents.

Surnia Ulula var. Hudsonia *(Gme.)* Coues.

HAWK OWL; DAY OWL.

PLATE XXX.

Also known as the "Canada Owl," but this rather throughout the northern parts of Europe and Great Britain than in Canada. The typical *Ulula* belongs to Europe, the variety *Hudsonia* to America, and, according to the authors of the "Birds of Europe," to Great Britain. This last is a very remarkable fact, and it is further stated that it is the American form or *geographical race* which inhabits the British Islands apparently to the entire exclusion of the other. Ornithologists long thought, and many yet do, that the American and European Hawk Owls were absolutely identical; these, however, now prove to form two distinguishable *geographical races*. The American bird is darker colored, and the bars of the whole breast and belly are broader, "only a small gorget being left white." The Hawk Owl is a strictly boreal species, inhabiting the fur countries and the Arctic regions to a very extreme latitude. It is even rare, as a general rule, in Canada—numbers of winters passing in which few individuals have been observed or taken. Occasionally, however—a fact already recorded respecting the Snowy Owl—it appears rather numerously around Montreal, Quebec, and in the Lower Provinces, whence it also extends into the northern New England States. Rarely is it met with as far south as Philadelphia; and Coues says "from Massachusetts southward its occurrence is rare and fortuitous." One instance is recorded of its appearance in Bermuda (Drum-

mond); but this individual had undoubtedly lost himself, or was making a desperate attempt to reach the opposite Pole—just possibly was an exile. Mr. Wheaton mentions this Owl in his catalogue of the Birds of Ohio; and Ridgway records it as occurring in Illinois. It has not been met with to the west of the Rocky Mountains; but Dr. Cooper, in the "Ornithology of California," says it "will doubtless be met with sooner or later, as it is so abundant in the regions to the north of it (California)." We hardly understand what regions Dr. Cooper here refers to, as it is abundant nowhere, except in the fur countries and northward. In the McKenzie River district Ross gives it as common to the Arctic coast.

In Canada the Hawk Owl arrives early in April, and is taken occasionally by our hunters. Often at this season both it and the Short-eared Owl are exposed for sale in our markets, and in some rare instances are brought alive. They soon, however, disappear, having only "dropped in" on their journey northward, and are not again seen until about the months of October and November, as a few of them pass again to the southward. Rarely are they seen in summer; I have never met with one, but have heard of instances related of stragglers being observed very early in the autumn. It is just possible that a stray pair may remain and nest with us; but this fact has not yet, to my knowledge, been authenticated. Mr. Passmore and Mr. Couper, naturalists of Montreal, both of whom have collected largely throughout Canada, inform me that they know nothing from personal experience of the nest and eggs of this Owl, and are assured that Dr. Hall in giving it in his list of resident and breeding birds for the "District of Montreal," was greatly in error. Mr. Couper also further writes me: "The Hawk Owl is a thoroughly northern bird, but it comes down to the neighborhood of Quebec in September, and some years is abundant. In Labrador they are said to be abundant throughout the year. It no doubt follows the Ptarmigan on its migrations. The nest has not yet been found in Canada." It is a common bird in Newfoundland, according to Reeks, who states that it remains through the year, but is less abundant in the depth of

winter than at other seasons. In Nova Scotia the Hawk Owl is a winter visitant, and has not been met with in summer. Dr. J. Gilpin of Halifax, N.S., who has kindly sent me a manuscript list of the Rapacious Birds of that Province, states that during some winters the Hawk Owls are very common, and then scarce for a number of years. He has only observed them in the winter season. Being a day-flying species, this Owl is generally at once observed, and we consequently cannot conjecture—as we do respecting some of the nocturnal species—that it may occur more abundantly than we know of. The bird is undoubtedly rare in the inhabited and more temperate parts of Canada, and the name of "Canada Owl" is far more applicable to the Barred Owl *(S. nebulosum)*, which, as we have seen, is abundantly and universally diffused.

Coues states that the Hawk Owl is common during winter in the northern half of New England, and "known to breed in some parts of Maine;" and Mr. Samuels affirms that he "has known several specimens to be taken in Vermont and New Hampshire," and expresses his conviction that it breeds occasionally in the New England States. Neither of these statements, however, as to its breeding are borne out by records of actual observation, nor is the name given of one person who has himself seen the eggs or nest. The fact, if correct, of its being a resident bird in Newfoundland certainly gives some color to the statement of its breeding in Maine, but some further evidence is still required.

I have seen several of these birds on the island of Montreal, and on Nuns' Island, in the St. Lawrence, opposite this city. They prey largely upon mice, squirrels, and birds, but occasionally when in the neighborhood of farm houses, make raids upon poultry and tame pigeons. On the island last named I have met with them on some of the coldest days in winter, and on one occasion observed a pair most grievously tormenting a large Barred Owl. The vision of the Hawk Owl is adapted to the day-light, and even the strongest sun-light, and it takes no ordinary sportsman to circumvent them. They are, however, extremely bold birds, and in the fur countries are said to follow the hunters, and often

to carry away a fallen bird before it can be secured. This Owl retires to rest at night like an ordinary bird, and is but seldom seen hunting during the twilight. It is said to breed in hollow trees and sometimes to construct a nest among the branches of sticks, grass, and feathers. The eggs—from such information as I can gather—are from three to six in number, and measure from 1⅜ to 1¼ in length, by 1⅛ to 1¼ in breadth. They are white and almost spherical. Further information respecting the nidification of this species and specimens of its eggs are special desiderata.

Mr. J. G. Wood, in his "Illustrated Natural History," in alluding to this Owl, says: "Its nest is generally made on the summit of a tree, contrary to the usual habit of Owls, which usually take possession of a hollow in some dead branch, and lay their eggs on the soft, decaying wood, or make their home in a convenient crevice of some old building." But Mr. Wood here must be drawing entirely upon his imagination or from hearsay, for the Hawk Owl though sometimes, as we have already observed, building its nest in the branches of a tree, oftener chooses the hollows of trees, and deposits its eggs *on the soft decaying wood.*

The specimen from which Plate XXX was taken was purchased some years since alive in the Bonsecours market. It is the second instance only, known to me, in which the Hawk Owl has been so taken in Canada. This individual was kept alive and in good condition for upwards of six weeks, and I had abundant opportunity of studying his general character and various attitudes. For some time he was very timid and suspicious, would eat nothing, and seemed determined to mope himself to death. After a little judicious negligence, however, in visiting him, and a short term of starvation, he came round a point or two, and even showed some measure of interest and expectancy when food was brought to him. At the end of a fortnight he ate his meat—cut into small junks—greedily, and, to my surprise, drank water freely. I say to my surprise, for the impression conveyed to my mind heretofore by the writings of authors generally on the Owl family had been that these birds never drank, and in fact detested water. But

having now myself seen both the Hawk Owl and Snowy Owl drink water freely and even delight to wash in it, I am convinced that all other Owls do the same. We thus weed out another incorrect and "idle tale" from our ornithological biographies. But to return to our Hawk Owl. He soon became quite at home in the stable in which he was confined, and amused us greatly by his cunning and droll antics. He was a great mouser, and was ever on the watch for these animals. When thus watching he generally took up a position on the edge or corner of a box immediately above a mouse or rat-hole, and there remained patiently for hours at a time. In this position—his most natural one—he was mounted after death, and the portrait here presented is "true to life." Nevertheless, his attitude has already been found fault with by a few of my ornithological friends to whom I happened to show some of the advanced Plates of the work. They assure me that "the bird will hardly be recognized as the Hawk Owl." To these, and all such critics, however, I have simply to say, a Hawk Owl it is nevertheless, and a very beautiful specimen in full plumage. It may be unlike the majority of figures extant and the greater number of stuffed specimens in collections—most of which have been drawn and mounted by artists and naturalists who have never set eyes upon the living bird—but I can vouch for its resemblance to the bird kept alive by myself, and which, now mounted in my collection, constantly recalls to my memory many an amusing incident in connection with its short term of captivity.

SP. CHAR. Wings rather long, first three quills incised on their inner webs; tail long, with its central feathers about two inches longer than the outer; tarsi and toes densely feathered; upper parts fuliginous brown, with numerous partially concealed circular spots of white on the neck behind scapulars and wing coverts; face grayish white; throat white, with longitudinal stripes of dark brown; a large brown spot on each side of the breast; other under parts with transverse lines or stripes of pale ashy-brown; quills and tail brown, with transverse bands of white. Bill pale yellowish; irides yellow. Color on the upper parts darker on the head, and the white markings more or less numerous in different specimens.

Total length—Female: 16.00 to 17.00 inches; wing, 9.00; tail, 7.00.
" —Male, a shade smaller.

The difference between the male and female birds of this species is, as a general rule, hardly perceptible. Both are marked

alike, but perhaps the colors of the female are less intense. I have met two remarkably light or pale-colored individuals, indeed almost approaching *albinism*; but these are probably of extremely rare occurrence. In nearly all the species of Owls, however, common to North America, we find the same whitish or pale-colored individuals. Age may have more to do with these occasional forms than is at present suspected.

With this Hawk-like Owl I close my review of the FAMILY STRIGIDÆ. Ten species have been described as occurring in or inhabiting Canada, and it is not probable that any more will be discovered. Species in a country so well traversed as ours do not spring into existence suddenly, and any that could have escaped the notice of our prying naturalists for so long a time must indeed be rare and remarkable birds. To such, when discovered, I shall be happy to devote an entire work. For the present, however, our young naturalists and the public generally may feel assured that these ten species represent all the Owls of Canada. But we have much more to learn about these. We really know but little respecting the nidification of any them, and there is not a collection in Canada that can boast of anything like a complete set of their eggs. We have also much to learn respecting the immature stages of these birds, and of the peculiar forms at present attributed to *melanism* and *albinism*. In conclusion, then, I would direct the special attention of students and collectors to this retiring and unobtrusive Family, for although the individuals composing it are "only Owls," still these afford one of the most interesting fields of study to be found in the whole domain of Ornithology.

PLATE. 1

Copy Right Secured for Canada & U.States

Duck Hawk, Peregrine Falcon.

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Pigeon Hawk. American Merlin

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White-tipped Dove.

PLATE IV

opy Right Secured for Canada & U States.

Gyr Falcon (Dark Variety.)

The Sparrow Hawk

PLATE VI

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American Peafowl

Male

Entered according to Act of Congress, in the year 1828, by J. J. Audubon, in the Clerk's Office of the District Court of Pennsylvania.

Accipiter velox

Sharp-shin Hawk

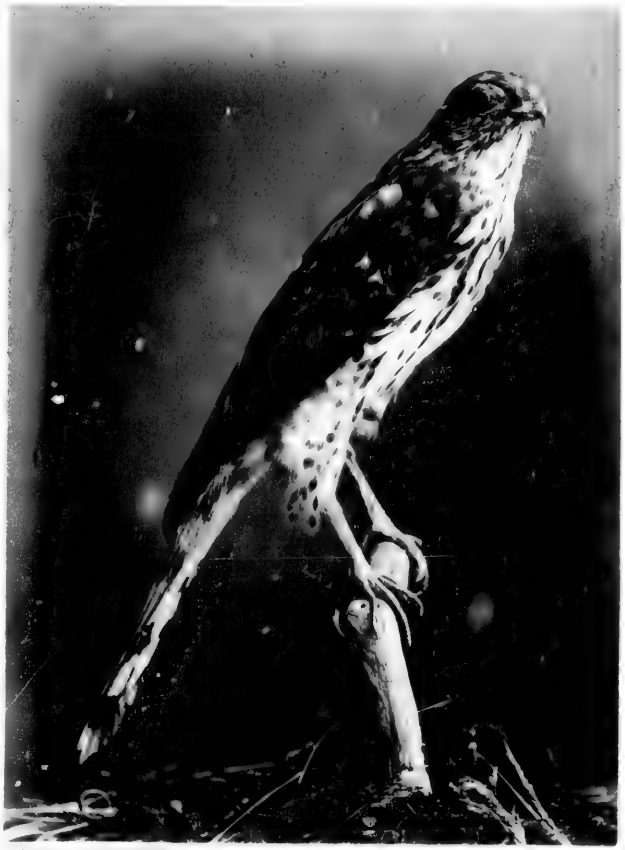
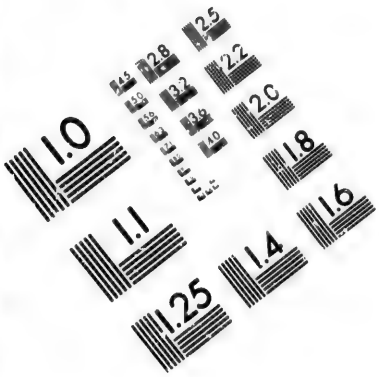
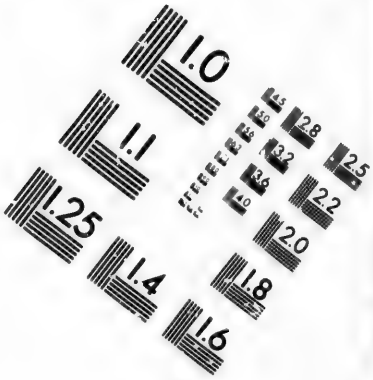


PLATE IX

Fish Hawk or Osprey (Pandion haliaetus carolinensis)

Fish Hawk or Osprey





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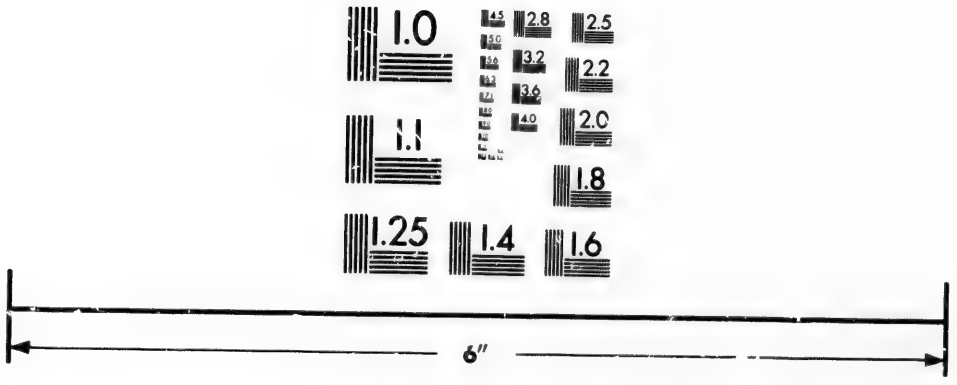

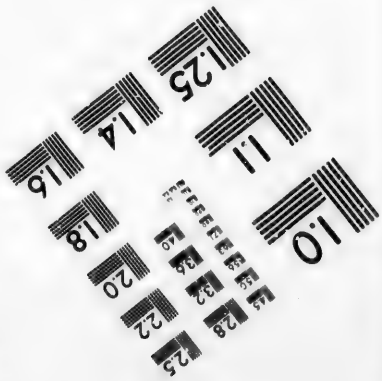

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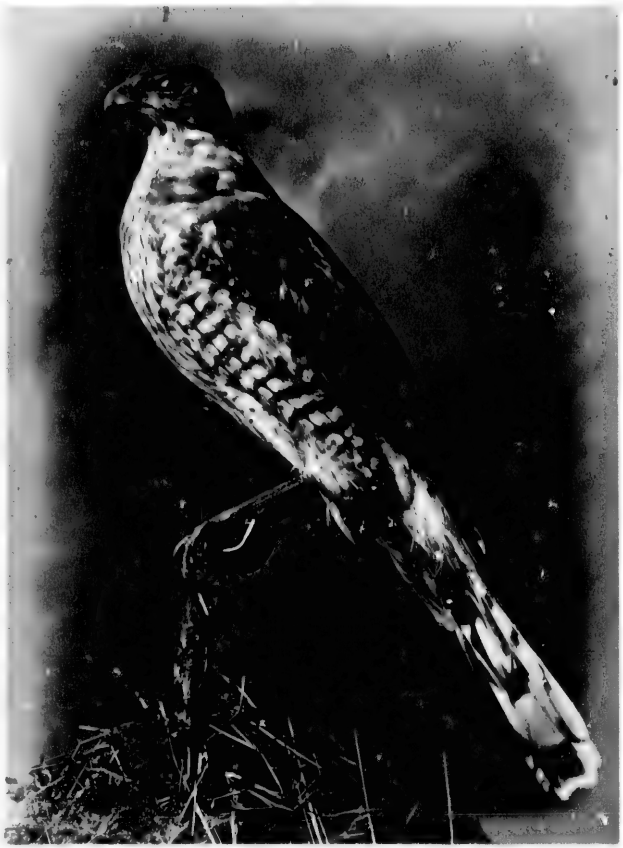
Winter Plumage. Red Shouldered Hawk

Immature



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Rough-legged Buzzard

PLATE XV

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Rough-legged Buzzard Falco lagopus.

Copyright secured in the United States of America.

Harris Hawk.

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Golden Eagle, Ring-tail.
35 Years old.

PLATE XIX

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American Osprey; Fish Hawk

PLATE 63

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Great Horned Owl.

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Screech Owl. Mottled and
Red & Gray Stages.

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About eleven [illegible]

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Hawk Owl, Richardson's Owl.

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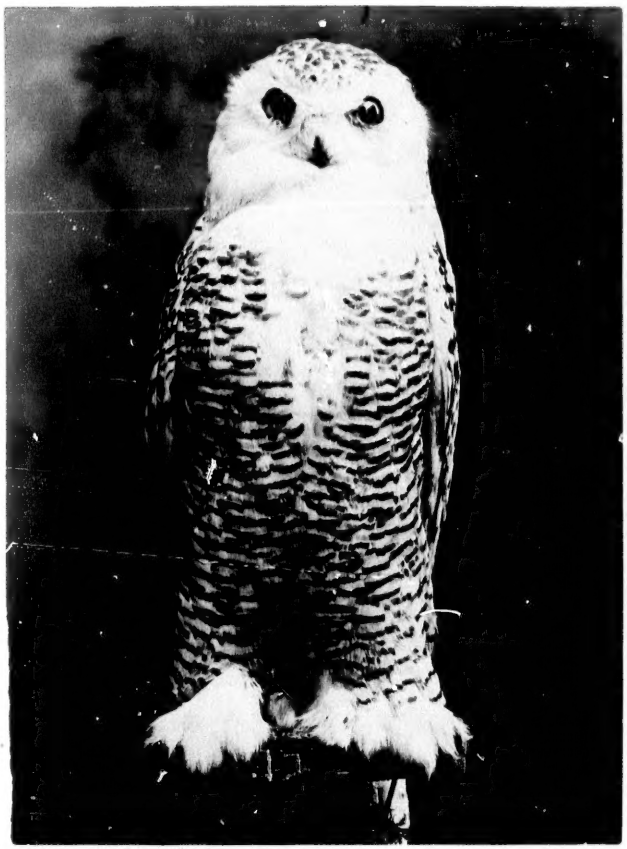
Snowy Owl. Nyctea nivea

PLATE. XXIX



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Snowy Owl. White Owl.
Adult Female

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Hawk Owl, Day Owl.